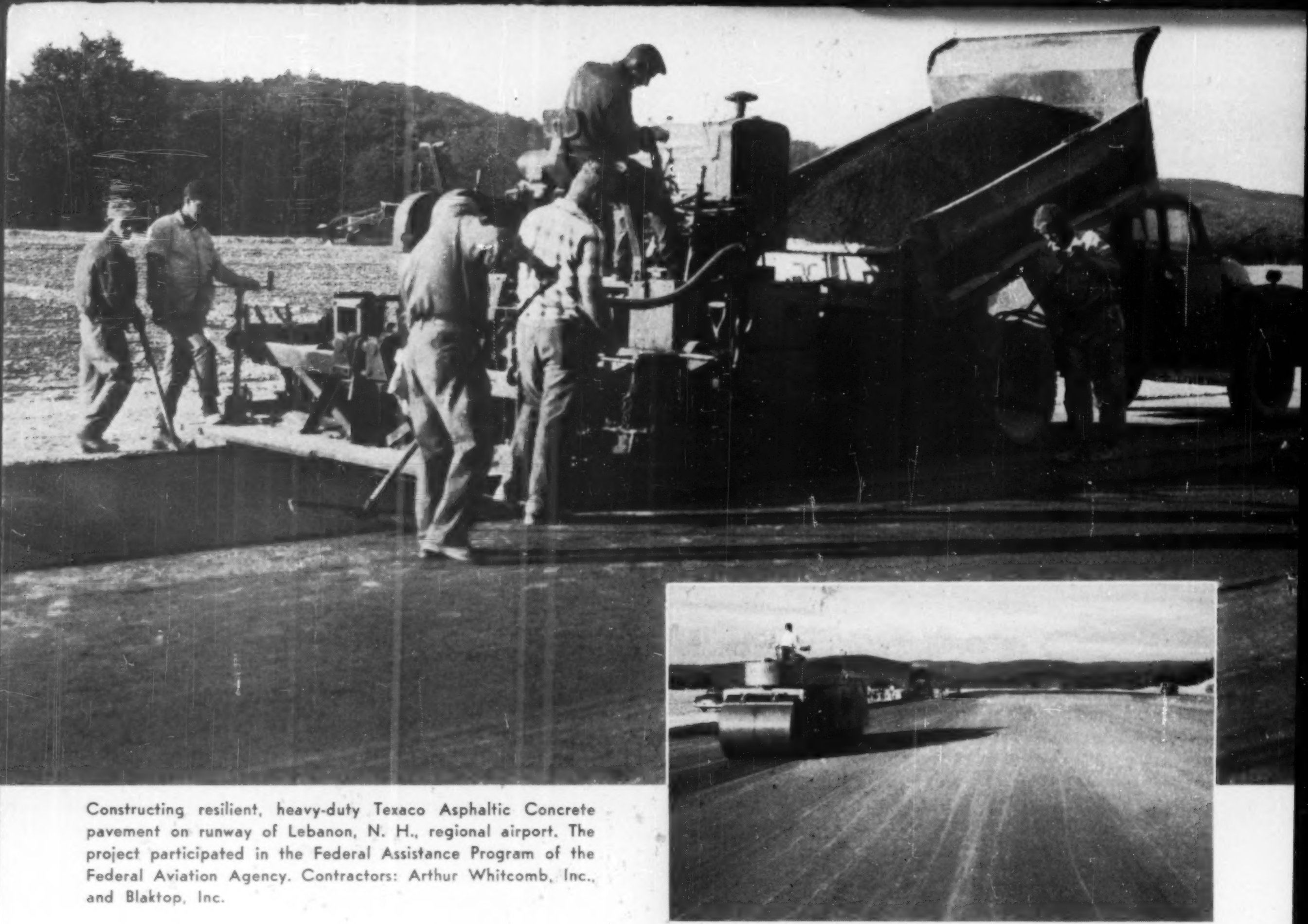
DECEMBER 1960

The American City

A Buttenheim Publication



Constructing resilient, heavy-duty Texaco Asphaltic Concrete pavement on runway of Lebanon, N. H., regional airport. The project participated in the Federal Assistance Program of the Federal Aviation Agency. Contractors: Arthur Whitcomb, Inc., and Blaktop, Inc.

Asphalt gives life-prolonging resilience to airport runways

The east-west runway of this regional airport at Lebanon, N. H., had to be extended 2,000 feet to accommodate commercial airliners. The type of pavement which has been constructed on this extension combines impact-absorbing resilience with rugged durability and moderate cost.

A 9-inch subbase of gravel was laid and covered by a foundation of crushed gravel, also nine inches thick. After application of a bituminous prime coat to the foundation, a heavy-duty wearing surface of hot-mix Texaco Asphaltic Concrete was laid and compacted. Thickness of the 2-inch Texaco Asphalt surface was increased to 2½ inches where the runway also was called upon to serve as a taxiway.

In addition to its ability to absorb heavy impact and its moderate cost, the Texaco-paved runway at Lebanon, N. H., is highly skid-resistant, waterproof and immune to chemicals used to melt snow and ice. These characteristics add up to a low maintenance cost.

Texaco Asphalt products offer city officials a number of heavy-duty, intermediate and low-cost types of paving for municipal airports, as well as for streets and parking areas.

Helpful Asphalt Booklets

Useful information on methods and material recommended for all types of municipal asphalt paving is supplied in two free Texaco brochures. Our nearest office will be glad to forward them to you. No obligation.

TEXACO, INC., Asphalt Sales Div., 135 E. 42nd Street, New York 17, N. Y.
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TEXACO ASPHALT

The
American City
A Buttenheim Publication

DECEMBER 1960

MAGAZINE OF MUNICIPAL MANAGEMENT AND ENGINEERING

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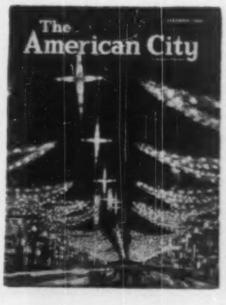
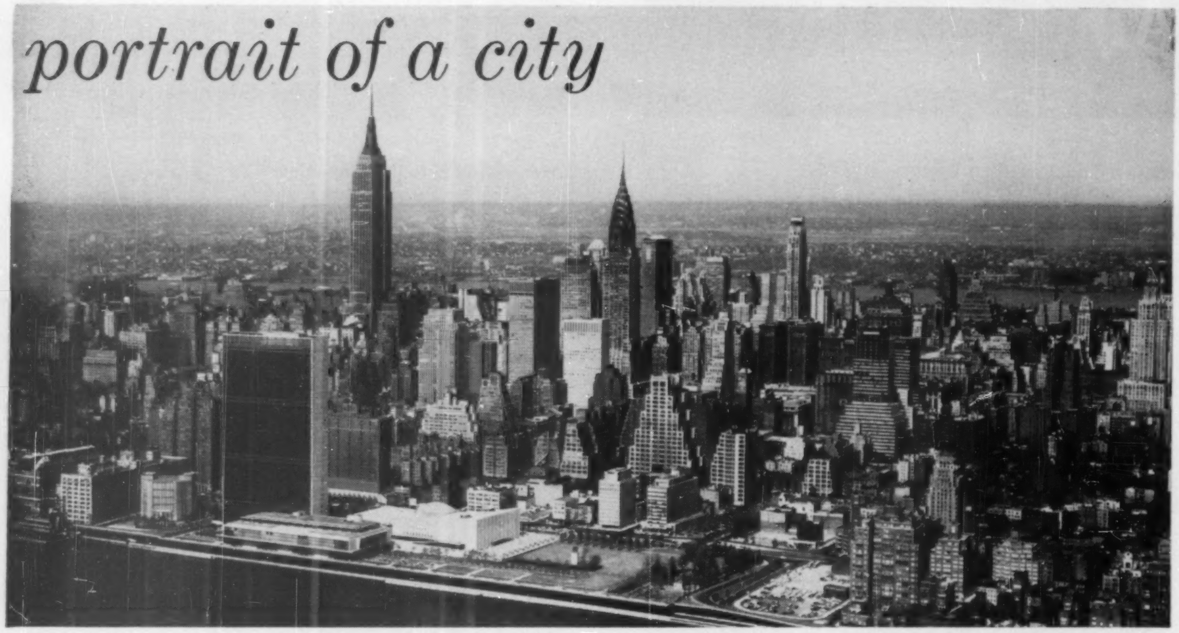


Cover Picture

All that glitters is not gold. In the case of Houston's Main Street Christmas decorations, the glitter comes from more than 7,000 light bulbs playing on 75 miles of gold-lacquered polished aluminum foil. Backed by Houston's Mayor Lewis Cutrer and a group of downtown businessmen, the successful decorations program has become a yearly affair. A Christmas Decorations Committee supervises the installation of the decorations, removes and stores them. Although the reason for the program was not commercial, it did bring returns as good as gold the first year, as the decorations resulted in a considerable increase in business. See the story on page 137.



CITIZENS, OFFICIALS PRAISE PUBLIC PHONES ON CITY PROPERTY

The City Is New York.

Just a few months ago, the first outdoor telephone was installed on city property. By the end of this year the citizens of New York will be able to telephone from more than 700 convenient booths, located at key points in Manhattan.

This new program was designed to bring to New Yorkers the safety, convenience and service of round-the-clock telephone facilities.

To their elected officials, public telephones mean a welcome and substantial addition to the municipal revenue.

Perhaps your community can benefit from the same kind of custom-designed public telephone program. For more information, call your local Bell Telephone manager. He'll be happy to send a representative to outline an outdoor telephone plan to suit your needs.

BELL TELEPHONE SYSTEM

TELEPHONE
TELEPHONE
TELEPHONE

Volume 75 Number 12

The American City

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Municipal Index
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LETTERS TO THE EDITOR

Water Progress

I was very pleased to read through the October issue of The American City, especially the very fine articles on the progress Philadelphia has made in renewing its water works. Your interest in our city is deeply appreciated.

I just want to add that we are all very proud of our Water Commissioner, Sam Baxter, who is undoubtedly one of the nation's ablest public servants.

Richardson Dilworth
Mayor
Philadelphia, Pa.

Flowering Trees

You may be interested to know that an article in the January 1960 issue of The American City, "More Small Flowering Trees Wanted" (p. 151), combined with several other factors was responsible for the organization of the Niagara Frontier Tree Conference, held at Kleinhans Music Hall, Buffalo, November 17th and 18th, 1960.

One of the accomplishments of the Conference was the development of a list of trees that would flourish here in western New York; I am sending along a copy of this.

We received numerous compliments on using The American City editorial on "Consulting Engineers" on the cover of our brochure—thanks to you.

Henry W. Osborne, *Secretary*
Niagara Frontier Tree Conference
City Hall, Buffalo, N. Y.

Water-Meter Reading

The article "From Meter to Ledger by Radio" by A. F. Geeslin in your November 1960 issue (p. 112) is a challenge to all of us connected with utilities.

For many of the steps involved in meter reading, billing and collecting, there simply must be a better way. As described for Dublin, the call-back time saved is in itself a very important advantage of the constant radio contact between meter reader and billing office.

Another problem which is growing steadily more serious is that of gaining access, particularly to the water meter. Carrying keys, leaving cards for the customer to read his own meter, or arranging for a special appointment—all these methods are used, with varying success. Placing the meter so that it can be read without entering the home, or providing an auxiliary remote-reading instrument are still other solutions to this problem.

The writer feels very strongly that, for savings in both customer costs and customer good will, our utilities should direct their efforts toward maneuvering the meter reader out of the home!

Harris F. Seidel, *Director*
Water and Sewage Treatment
Ames, Iowa

Editor's Note: Dr. Seidel is the president of the Iowa Section, AWWA. He is one of the consultants of the International Cooperation Administration (ICA) and recently returned from Peru where he advised on the feasibility of water and sewerage expansion for Arequipa, the country's second largest city.

Letter from Our Roving Editor

. . . to Alden W. Welch, Research Editor

Dear Alden

Brisk busy trip here. Am convinced that every city in Europe needs advice on street lighting. Rome traffic makes Times Square look orderly and dignified.

Best wishes,
Bill Foster
Tel Aviv, Israel
November 16, 1960

* * *

FIRST CITY GEODESIC DOME

. . . was erected in 1957 at Virginia Beach, Va., by the Kaiser Aluminum & Chemical Corp. The structure houses the city's new auditorium. It presents a clear span of 145 feet and has a height of 49½ feet. It utilizes a newly developed system of structural design developed by Buckminster Fuller, world-renowned architect, and is distinguished for its economy, simplicity and speed of erection, as well as its attractiveness.

Other municipal structures using these goedesic domes include:

- *a civic auditorium, Borger, Tex., in* 1957
- *an opera house, Fort Worth, Tex., in* 1958
- *an exposition hall, San Bernardino, Calif., in* 1958
- *an airport maintenance and dispatch center, Providence, R. I.,* 1960
- *a modified dome for a marine exhibit owned by Dade County, Miami, Fla.,* 1960

"THE NEW No. 12E HAS A LOT OF IMPROVEMENTS. PLENTY OF POWER FOR ANY JOB. SHIFTS AS EASY AS A CAR. STEERS AND HANDLES BETTER THAN ANY GRADER I'VE EVER OPERATED."

Irvin Williams, Equipment Operator, Street Dept., Rolla, Missouri

CAT
No.12
DANGER

The economical record of Caterpillar equipment owned by Rolla convinced the city officials to purchase a new No. 12E Motor Grader. It will be used for cleaning ditches, mixing and laying road material on the city's 50 miles of streets.

Operator Irv Williams and Superintendent of Streets Bill Carroll are both enthusiastic about their new Cat Grader. But then that's understandable because the new No. 12E really is out front in Motor Grader performance.

Here are a few of the reasons: A new, compact engine provides greater lugging ability in tough going. It's designed for long life and easy servicing. Horsepower rating is still 115, but this new engine develops higher torque and gives the No. 12E greater load-handling capacity. A new two-cylinder vertical starting engine replaces the horizontal type, providing positive in-seat starts in any weather. The dry-type air cleaner is now standard, too. It removes at least 99.8% of all dirt from intake air, cutting maintenance time by as much as 70%.

Retained features that keep operating and maintenance costs to a minimum are: the exclusive oil clutch which provides up to 2,000 hours without adjustment; big clearance between the top of the moldboard and the bottom of the circle drawbar; and improved, anti-creep mechanical controls.

These are just a few of the reasons why the No. 12E is a better investment for your tax dollar. For the complete picture see your Caterpillar Dealer. A demonstration will specifically show you how the new No. 12E pulls through the tough going!

Caterpillar Tractor Co., General Offices, Peoria, Ill., U.S.A.

CATERPILLAR

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BEST BUY FOR YOUR TAX DOLLARS

Real Christmas Gifts For Local Governments

In this season, when mankind strives to rededicate itself to the ideals of brotherly love, good will and peace among all men, we often exchange gifts as tokens of this spirit. Some gifts reflect these ideals, some do not but often merely try to purchase special privilege that tends to embarrass the receiver.

An experienced city administrator once said that he never accepts a gift that he cannot eat or drink in one sitting. Others, equally knowledgeable, have said that they accept no gifts at all that have monetary value and that they instruct all their subordinates to follow the same example.

However, there are gifts that a people can bestow on their local governments that will be welcome and that will return to the giver the traditional sevenfold. These gifts are not tangible nor are they purchasable at a market price, but they are of a substance that strengthens a free people.

The first gift is the recognition that strong, independent local governments form a cornerstone in a free society such as ours. The stultifying iron hand of a police state cannot tolerate the existence of independent local governments. Where they exist, one knows that freedom thrives also.

The second gift is a new, more realistic meaning, to the word "politician." A free people select their own leaders. They do this by vote, through the machinery of politics. Judged objectively, they select an able group of men to take charge of their affairs. Politics is an honorable profession. True, it often is demanding and without much material reward. But it is nonetheless required. And it deserves appropriate respect.

The third gift is a more understanding approach to the career civil servant. The word "bureaucrat" is an ugly one, indicating inefficiency, incompetence, and lack of loyalty to the basic governmental unit. There still are some who seek to protect their jobs even though this may be contrary to the best interests of the city. But their numbers are diminishing. And the number of alert, skilled young men and women, highly trained, who have dedicated themselves to the principle that a democratic government can be efficient, is steadily growing.

A fourth gift would be an alert citizenry, earnestly and unselfishly working for the good of their communities. Edmund Burke, the Irish philosopher, once said, "All that is necessary for the triumph of evil is that good men do nothing." Some 24 centuries ago, Plato said, "The punishment of wise men who refuse to take part in the affairs of government is to live under the government of unwise men."

This fourth gift would be the most welcome of all. It would mean that badly needed reassessment programs could proceed without hysteria, so that a community could take much of the injustice out of present taxing programs. Many assessment practices in use today breed slums by making them financially profitable.

This gift would enable local governments to attack and overcome basic weaknesses in their structures such as inadequate water supplies, unsanitary sewerage and refuse systems, overloaded and uncoordinated traffic and transportation facilities, deteriorating residential and business areas. Dedicated people unselfishly backing their local governments have the power of accomplishment that few realize.

Gifts such as these, intangible and without price, would strengthen our nation's local governments and return to the givers a rich reward. And they would strengthen our rededication to the ideals of brotherly love, good will, and peace among all men.

MODEL DAM BY R. S. BALDWIN

When it comes time to appoint a trustee or fiscal agent for revenue bonds, The Chase Manhattan Bank is at the service of state, county and municipal authorities. Chase Manhattan has the staff and experience to handle this function as trustee or fiscal agent in cooperation with banks in the areas where the projects are located.

For complete details write: Corporate Trust Division,
The Chase Manhattan Bank, 40 Wall Street, New York 15.

OUR MUNICIPAL NOTEBOOK

$700 PER CAR SPACE

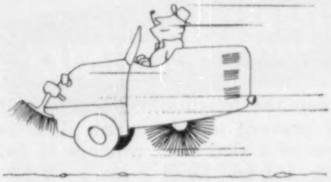
. . . is the bargain-basement price for an off-street parking garage in Tallahassee, Fla. Some of its cost-cutting features are:

- *sloping terrain that eliminated grading costs.*
- *one-way traffic pattern for all five floors.*
- *60° angle parking, which saves space, makes parking easier, and permits more flexibility in parking stall sizes.*
- *a "ticket splitter" which automatically issues parking tickets when a motorist enters; the only employee is the cashier at the exit.*

* * *

CLEANING ANNEXED STREETS

. . . puts a city's sanitation department to a critical test since newly annexed areas always expect visibly improved services and almost always are located in the most difficult areas to reach. Superintendent Ed F. Muckelroy, El Paso, met this challenge by utilizing a Mobil-Sweeper that can travel at speeds of 35 miles per hour when not sweeping, either when the hopper is empty or full. He uses it in newly annexed areas, many of which are five miles apart and require a minimum 15-mile run from the nearest storage yard.



* * *

BALING LEAVES

. . . is the answer to the leaf-collection problem by Park Superintendent Robert Sharkey, Attleboro, Mass. To gather the leaves, the men use an Atwater-Strong Lo-Blo air broom to put the leaves in windrow. If the amount of leaves gets too large, they will help the air broom with a Gravely tractor and a pusher basket with 26 spring teeth. The crew then gathers the leaves with a McCormick hay baler pulled by a Farmall tractor; this produces some 400 to 500 bales of leaves each year that are placed in piles for composting. After about two years, they are available for mulching shrubbery and working into the soil around new plants. The Lo-Blo air broom has cut the time required for leaf gathering from ten weeks to only 2½ weeks.

* * *

TO INCREASE WATER PRESSURE

. . . Rocky Mount, N. C., simply raised its million-gallon water storage tank 25 feet. This enables the city to serve all sections of the city within the area which it may be expected to cover in the future. The erection work was performed by the Chicago Bridge and Iron Company. At the same time, the city erected a second million-gallon elevated tank and installed new feeder mains to provide a more uniform water pressure throughout the system.

* * *

SOIL-CEMENT PAVING

. . . of three types now carries traffic in Mobile, Ala. In an 80-mile street-paving program, the city placed:

- *six-inch soil-cement base with a single bituminous surface treatment and 1½ inches of hot-mix asphalt.*
- *six-inch soil-cement base with a single bituminous surface treatment and two inches of hot-mix asphalt.*
- *six-inch soil-cement base with a two-inch asphaltic binder and one inch of hot-mix asphalt surface.*

* * *

SIX LOADS IN ONE TRUCK

. . . is the sort of reduction that Springfield, Ill., gets when the loads are brush and tree limbs put through an Asplundh chipper. City crews put tree limbs with diameters as large as three inches through the chipper.

If you want more information on these topics, or any other municipal problems, drop a note to:

The Editors
THE AMERICAN CITY
470 Park Avenue South
New York 16, New York

OUT-OF-SIGHT WATER PUMPS

. . . don't need to cost your city a bit extra. Submersible pumps, with sealed electric motors submerged below water with the pump impellers, eliminate the need and expense of a pump house, do away with operating noise, and completely eliminate flood-damage risk. They can operate pumps as deep as 1,450 feet and they can be used in shallow settings for booster service in residential neighborhoods.

* * *

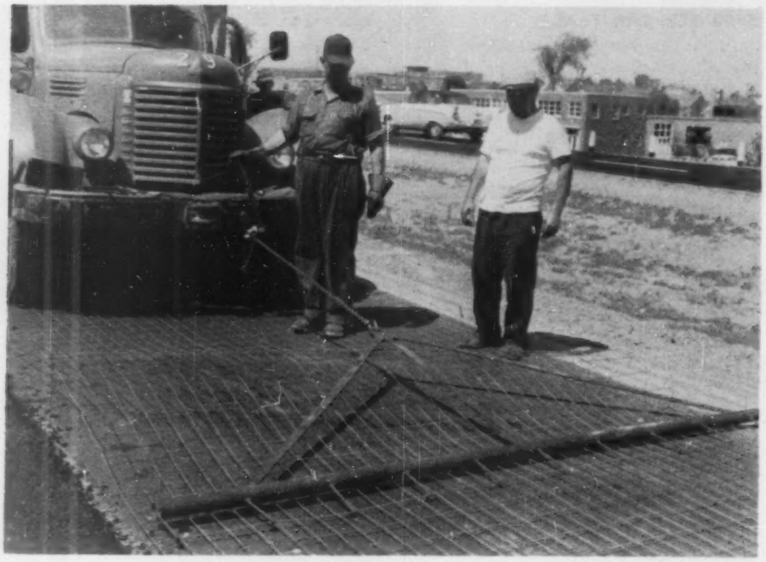
CHRISTMAS LIGHTS

. . . on Denver's City Hall is a tradition started 35 years ago. Today Denver's City Hall has probably the most beautiful Christmas decorations of any in the nation. It started with lighted candles on a pine tree, much to the discomfort of the Denver fire department. Today, Christmas Lighting Consultant Wilbur Latham decorates the entire city-county building with some 20,000 colored lights requiring an electrical capacity of 26,500 watts.

* * *

THE FIRST PRACTICAL STREETLIGHT

. . . was invented by Benjamin Franklin. He used an oil lamp, put an opening in the bottom, a chimney at the top to carry off the sooty combustion, and enclosed the lantern in four flat panes of glass for easy cleaning. It was the first outdoor oil lantern that would burn all night without cleaning. ◄◄



This tension bracket, fabricated on the job, takes out the slack, bulges and waves in the fabric before it is secured to the pavement.

One Answer to the Chuckhole Problem

Recent experience with reinforced asphaltic overlays indicates that the use of welded wire fabric reinforcing may provide a solution to the cracking and chuckhole problem. After six years of wear, a survey of an eight-mile stretch of U. S. Route 90 in Texas revealed that a welded wire fabric reinforced section evidenced 70% less cracking than a non-reinforced section. In Washington, D. C., a section of street resurfaced with reinforced asphalt also stood up well. After one year of service an inspection of this main thoroughfare showed longitudinal and structural reflection cracks practically eliminated, with transverse reflection cracking reduced approximately 60%.

After a year of heavy plane traffic, an investigation of the reinforced overlay placed on the central taxiway of Detroit's Willow Run Airport revealed that the surface was in excellent condition and that the few hairline cracks in evidence were held tight by the wire reinforcement.

Many large cities, including Cleveland, Chicago and New York have resurfaced bus stops with reinforced asphalt with excellent results. Boston, Des Moines, Kansas City and Worcester, Mass., have also used this type of installation on city streets.

Installation Tips

Based on experience in the field, the following suggestions are made regarding reinforced asphalt installations:

Fabric style 3 x 6—10/10 (longitudinal wires spaced three inches apart, transverse wires six inches, both ten gauge) is recommended for asphaltic concrete overlay.

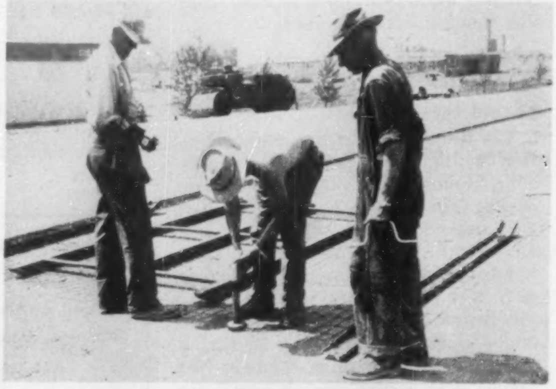
The fabric may be placed between the leveling course and binder course or between the binder course and surface course. Minimum cover should be at least 1¾ inches compacted.

The fabric should be held firmly in place while being covered. One way is to drive nails through the leveling course into the concrete base and bend them over the wire.

When using rolled fabric, use a tensioning device to hold the fabric flat before securing it.

A hold-down attachment on the finishing machine must be used to keep the longitudinal edges of the fabric in place and prevent entanglement. This can be made in the form of a sled with runners of five-inch channels eight to ten feet long.

Only dense graded asphaltic concrete mixes are recommended for use with welded wire fabric reinforcement. A good rule of thumb is that the maximum size aggregate should not exceed one-fourth of the narrowest opening of the fabric. ◄◄



Fastening the fabric to the pavement keeps it in place. Here a workman uses a powder-actuated driving tool to drive in the bolt-type fastener. The sled runners iron out the fabric as hot mix is applied.

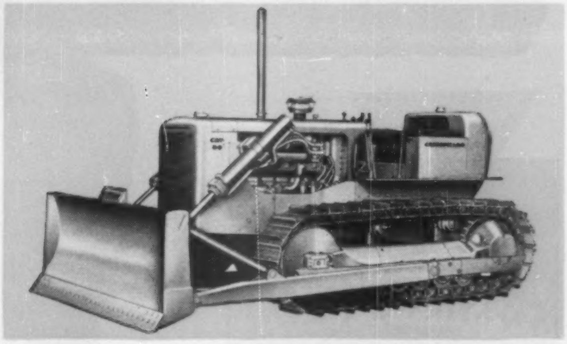
LAND IMPROVEMENT

IN LANE COUNTY, OREGON

Along the Oregon coast, Lane County's D6 cuts a road to the ocean for a new recreation area near Florence. Lane County, stretching from the Cascades to the Pacific, depends on its D6 and 18 other Caterpillar-built machines to carry out road maintenance and construction programs. Multimillion-dollar road programs, new state parks . . . these are the things being done in Lane County. County Road Engineer H. O. Walberg commented on their Cat-built equipment: "We're well satisfied with our Cat equipment for two big reasons . . . big production and little down time. And when we need dealer service, it's there! The D6 is particularly useful to us. It's small enough to work in tight places, but big enough to tackle tough jobs."

MACHINE IMPROVEMENT

BY CATERPILLAR



There's a new D6 . . . the Series B . . . just introduced by Caterpillar. On the same jobs, on tougher jobs, this new work-styled D6B sets production peaks unheard of from a machine in its size class. It has more than just improvements . . . the all-new compact Caterpillar Diesel Engine, the D333, boosts lugging ability 25%. A new integral hydraulic system (optional) puts power where it's needed . . . at the tools. Center-pivoted cylinder mounting gives increased lift/drop range. Under-the-hood location of tank, pump and valves permits convenient routing of hydraulic lines to bulldozer or implement cylinders . . . frees the front and rear for working tools. The operator's cockpit is all new. Controls make the tractor handle almost as if it knew what was needed next.

The exclusive Caterpillar oil clutch is standard on the D6B. It provides up to 2,000 hours of adjustment-free operation. Lifetime lubricated rollers need no lubrication until rebuilding . . . help roll up more operating time instead of repairs. The dry-type air cleaner removes at least 99.8% of all dirt from intake air. Can be serviced in five minutes. Cuts maintenance time by as much as 75%. Optional hydraulic track adjusters are another time saver. A grease gun is all that's needed to assure proper track adjustment.

Now's the time to see the new D6B and its complete line of versatile attachments. See for yourself how the new D6B gets more work for your tax dollars.

Caterpillar Tractor Co., General Offices, Peoria, Ill., U.S.A.

CATERPILLAR

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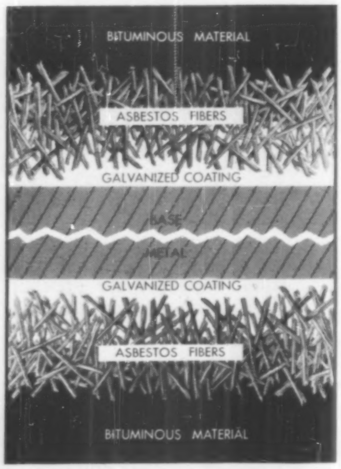
BORN OF RESEARCH
PROVED IN THE FIELD

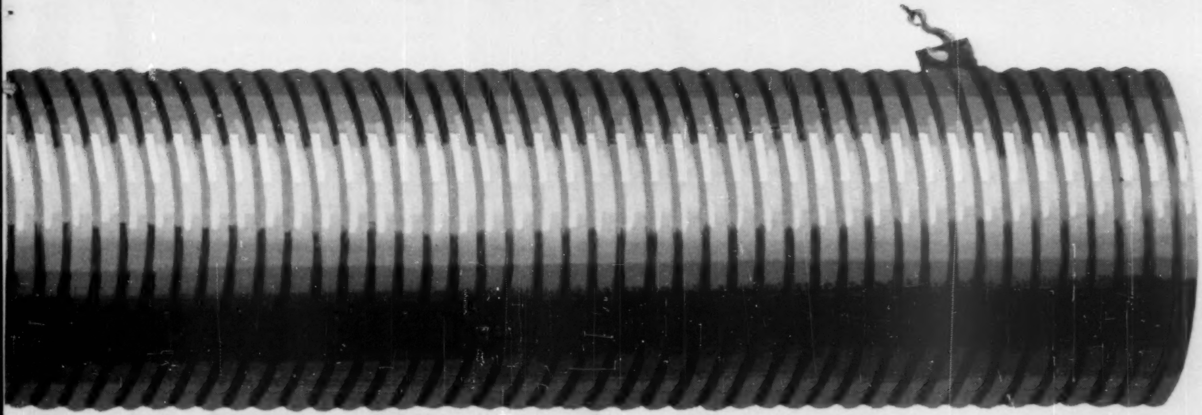
For carrying corrosive drainage..... THIS
YOU MORE SERVICE...
THAN ANY


BITUMINOUS MATERIAL
ASBESTOS FIBERS
GALVANIZED COATING
BASE
METAL
GALVANIZED COATING
ASBESTOS FIBERS
BITUMINOUS MATERIAL

Artist's drawing shows ASBESTOS-BONDED in cross section.

Steel

ARMCO PIPE WILL GIVE DOLLAR FOR DOLLAR... OTHER PIPE YOU CAN BUY



New steels are born at Armco

The Pipe is Armco Asbestos-Bonded®, a corrugated metal drainage pipe with unique corrosion resistant properties. Durable, inert asbestos fibers are imbedded in the zinc coating on the steel pipe while the zinc is still molten. Then a sealer-saturant is applied. The result is the most durable drainage structure known. Dollar for dollar, Armco Asbestos-Bonded will outlast . . . materially *and* structurally . . . any other pipe you can buy. Our customers have proved it!

For complete data, including sizes, gages and shapes, use the handy coupon. Armco Asbestos-Bonded Pipe is one of a complete family of service-proved drainage products. Let us send you a copy of the latest catalog of Armco Sewer Structures or Armco Corrugated Metal Pipe (check one or both in coupon). Armco Drainage & Metal Products, Inc., 7400 Curtis Street, Middletown, Ohio.

ARMCO DRAINAGE & METAL PRODUCTS, INC.
Department A
7400 Curtis Street, Middletown, Ohio

☐ Send catalog of Armco Sewer Structures (CMS-7458)

☐ Send catalog of Armco Corrugated Metal Pipe (CMS-5858)

Name________________

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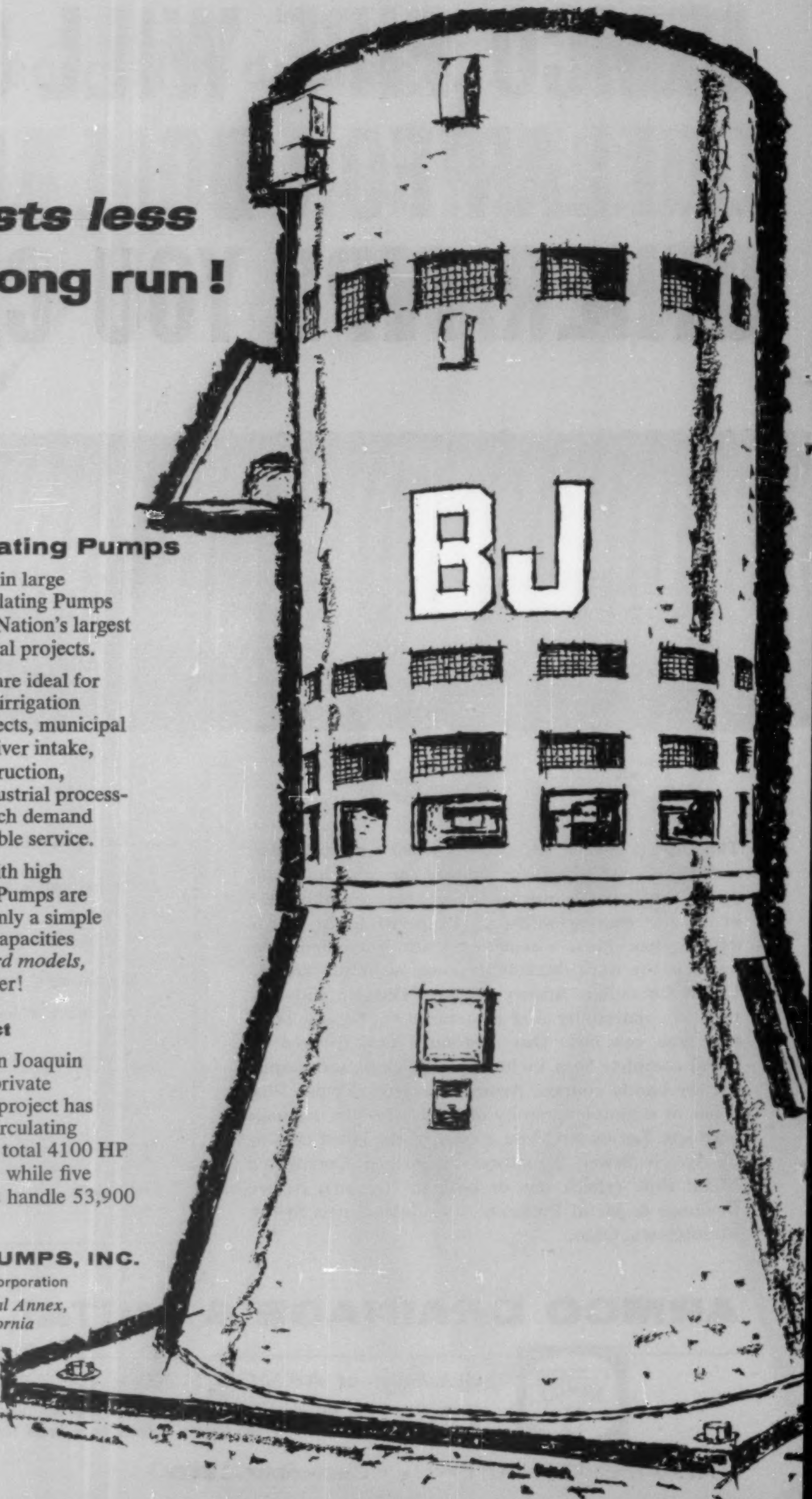
ARMCO DRAINAGE & METAL PRODUCTS

ARMCO

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company • The Armco International Corporation • Union Wire Rope Corporation

Quality *costs less* in the long run!



BJ Vertical Circulating Pumps

Designed to deliver water in large volume, BJ Vertical Circulating Pumps are in use on some of the Nation's largest industrial and governmental projects.

These BJ Quality Pumps are ideal for cooling tower circulation, irrigation service, flood control projects, municipal primary water pumping, river intake, dewatering for large construction, condenser circulation, industrial processing and other big jobs which demand the economy of long, reliable service.

Operating continuously with high efficiency, BJ Circulating Pumps are self-priming and require only a simple installation. Available in capacities to 50,000 GPM *in standard models,* and beyond on special order!

San Luis Water District

Located in California's San Joaquin Valley, the state's largest private agricultural improvement project has installed 10 BJ Vertical Circulating Pumps. Five at Station #1 total 4100 HP and deliver 69,600 GPM, while five more pumps at Station #2 handle 53,900 GPM using 2150 HP.

BYRON JACKSON PUMPS, INC.
Subsidiary of Borg-Warner Corporation
P.O. Box 2017-A, Terminal Annex,
Los Angeles 54, California

B·W

High school students supplement Aurora's park work force in a mutually beneficial experiment.

Teeners Prove Themselves in Park Program

A teen-age summer work force for the Aurora, Colo., park system has provided the city with a double set of dividends. First, it gave the youngsters summer work and training in securing future jobs; second, it saved the city considerable money. We started the program experimentally, last season, and will expand it next year.

The city went to great trouble to see that the hiring of the youngsters was on a fair, impartial basis. We made an announcement at a high-school assembly program and also publicized the hiring through local newspapers.

Thirty-nine students applied and assembled at the appointed time in the city council chambers. Mayor Henry W. Allard emphasized that this was an experiment and that, if it was successful, it would continue next year. Richard Armstrong, superintendent of the Aurora park department, briefed the students on their duties and responsibilities; then showed them some 300 color slides of the Aurora park system and the type of work that they would be doing.

Then we called the boys in for screening. With the exception of one or two, this was their first job interview. From the 39, the city hired 11 boys and placed the balance on an eligibility list to be called if added personnel should be needed. The city notified those not hired of their eligibility, in writing. Several parents commented favorably on this.

The program proved most successful. There was practically no absenteeism, the students were on time for work, and took a keen interest in all phases of the program. One student decided to major in forestry in college; others felt that they would like to work in municipal government and planned to major in public administration.

O. James Murray
Assistant to the City Manager
Aurora, Colo.

A Village Recreation Center

Following the national trend toward constructive use of leisure time, Rockville Centre, N. Y., recently completed a recreation building capable of expansion.

For the past five years, the village has utilized, on a temporary basis, a municipal garage consisting of some 16,000 square feet of area. This building was erected before it was actually needed and released to the Recreation Department for the time being.

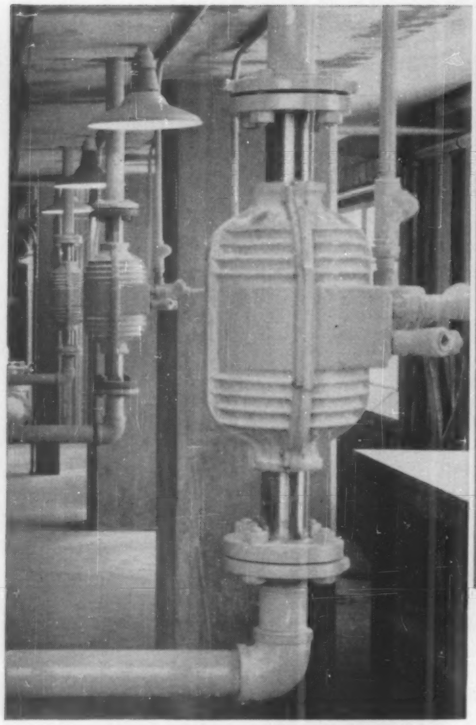
As a result of its use, and demands for increased facilities, the Village Board authorized the present center, a $375,000 structure. It is located on ten acres of land and designed so that it can receive bowling alleys and an indoor swimming pool in the future. On the surrounding area will be playgrounds, tennis courts and other various play fields.

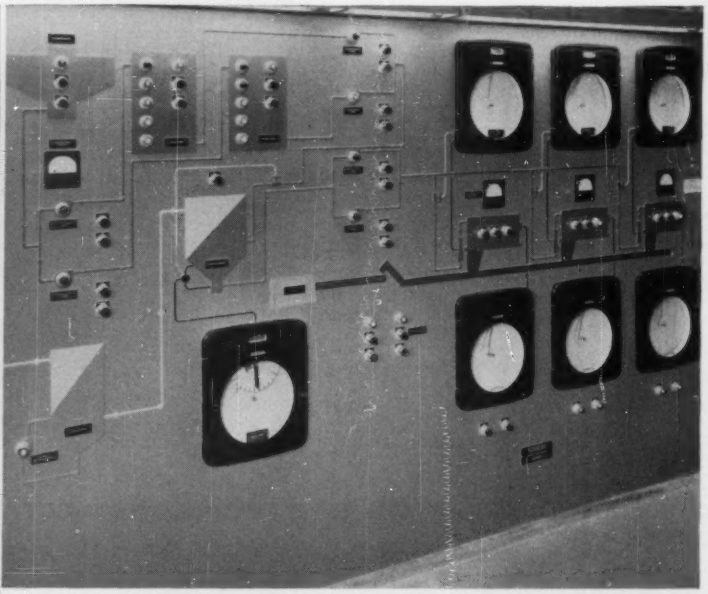
The plan for the first floor includes a basketball play area, 80 x 80 feet, with two courts which can be changed to a single large court with folding bleachers on one side. Adjacent is an auditorium and stage, with overall dimensions of about 40 x 80 feet.

Adjacent to the auditorium is a projection room and kitchen. Alongside both rooms are the locker facilities serving the recreation room, and also a lounge with administrative offices nearby. In the basement is an exercise room, a game room, a rifle range, and also a room for arts and crafts.

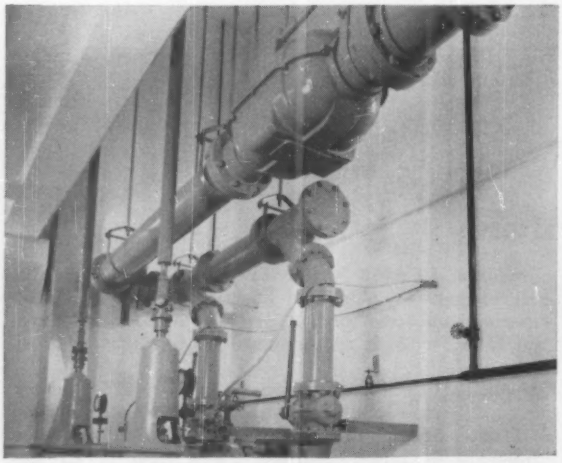
Rockville Centre, has a full-time recreation director, Mr. E. J. Dyroff, and a 25-man recreation advisory council. The department operates programs for those ranging from pre-school youngsters to senior citizens. ◄◄

Foxboro Magnetic Flow problems for





DAYTON, OHIO Three Foxboro Magnetic Flow Meters measure flow of sludge to centrifuges at Dayton's Lime Recalcining Plant. Designed around these meters, plant actually recovers up to 20% more lime than originally added to water. Graphic control panel in Feed End Building operates entire plant.



NEWPORT, R. I. At Newport, R. I. influent at the main sewage plant comes from both the town and a nearby Navy base. Determining how much of the total should be billed to the Navy is the job of the Foxboro Magnetic Meter and Foxboro Dynalog Recorder shown above.

Meters eliminate line restriction these municipal utilities

Introduced six years ago, the Foxboro Magnetic Flow Meter has proved its superiority for measuring water, sewage, sludge and other treatment plant flows.

Foxboro Magnetic Flow Meters have no flow restrictions of any type. No taps to get plugged or frozen, no seals or purges, no moving parts of any type. Measurement is made by electrodes flush-mounted in meter wall — then transmitted by electric cable to a Foxboro Dynalog* electronic recorder. Accuracy is ±1%.

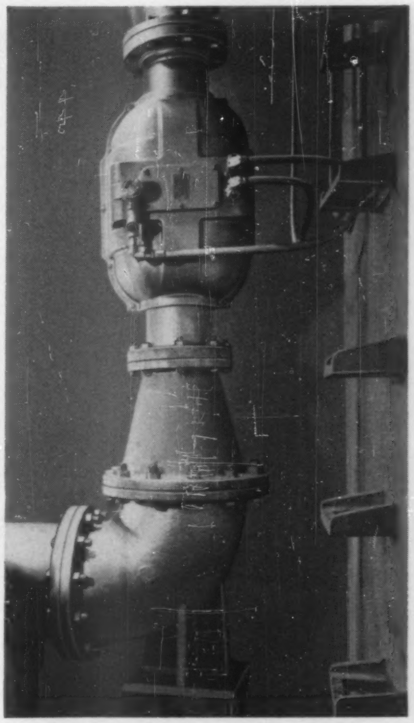
Foxboro Magnetic Flow Meters have solved some of the toughest municipal measurement problems. Ask your Foxboro field engineer to show how it can help with yours. Or write for Bulletin 20-14. The Foxboro Company, 9512 Neponset Avenue, Foxboro, Massachusetts.

*Reg. U. S. Pat. Off.

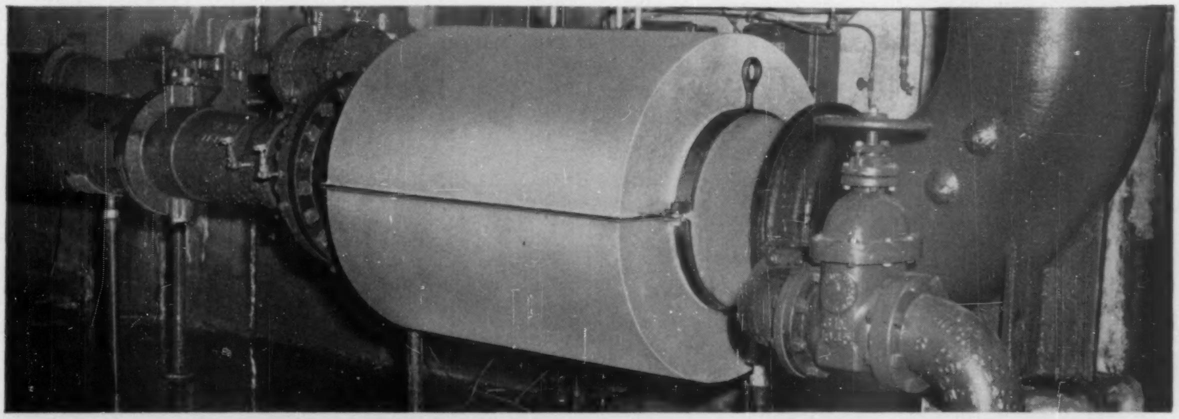
Partial List of Progressive Communities Using Foxboro Magnetic Flow Meters

Benton Harbor, Michigan	— raw sewage
Hayward, Calif.	— water
Pittsburgh, Pa. (Allegheny County Sanitary Authority)	— raw sewage
Covington, Ohio	— return activated sludge
Medfield, Mass.	— water
Orange County, Calif.	— sewage
Warren Township, Michigan	— raw sewage and sludge
Bloomfield Township, Michigan	— water
Seattle, Washington (Lake City Sewage Plant)	— sludge
Milwaukee, Wisconsin	— sludge
Piqua, Ohio	— sludge
Arkansas City, Kansas	— sewage
Sidney, Ohio	— return activated sludge
Frazer, Michigan	— raw sewage

Meter sizes on these installations range from 3 inches to 6 feet.



FARMERS BRANCH, TEXAS Eight-inch Magnetic Flow Meter at a sewage lift station. Meter was installed below ground level, right next to elbow and valve, without affecting its measurement accuracy.



CHICAGO, ILLINOIS This 20" Foxboro Magnetic Flow Meter was installed in the South District Filtration Plant in April, 1956. Because it has no line restrictions, plant officials knew the meter would add no more pressure drop than an equivalent length of pipe. Note how it was installed directly downstream from an elbow.

FOXBORO

REG. U.S. PAT. OFF.

Exclusive new design of H-30 provides features and performance which are

unmatched

by any other 4-wheel-drive machine in the 1-yard class

Ever since 1948 when Hough pioneered the 4-wheel drive tractor-shovel the PAYLOADER has been the pacemaker of the industry. This continued leadership has been the result of constant research and development, better engineering and more experience than any other manufacturer.

Typical of PAYLOADER superiority is this smallest 4-wheel drive machine, which incorporates many advanced and exclusive design features unmatched by any unit of its size and type.

The H-30 is the only unit of this size and type with boom-arms positioned completely ahead of the operator's compartment for the utmost safety.

The H-30 is the only unit of this size and type with a power-shift transmission which *does not* require *stopping* for a range-shift. It is of Hough design and manufacture.

The H-30 is the only unit of this size and type with dual brake pedals – giving an "operator's choice" of braking with or without transmission engaged.

The H-30 is the only unit of this size and type with a sealed and pressure-controlled hydraulic reservoir with renewable cartridge-type filter and fine-mesh screen.

The H-30 is the only unit of this size and type which has a separate oil-cooling radiator – a fan-cooled "oil-to-air" heat exchanger that cools the transmission and torque-converter oil.

The H-30 is the only unit of this size and type which has as much built-in accessibility. The dip-stick, filler cap, batteries, connections and other service points can all be reached from ground level.

The H-30 is the first and only 4-wheel drive tractor-shovel that has special seals on all bucket and lower loader points to keep grease in, keep dirt out and reduce wear in these pivot locations.

The H-30 is the only unit of this size and type that has a single hydraulic bucket ram and a high-leverage linkage with a minimum of working parts. The hydraulic lines feature the maximum use of formed tubing and a minimum of hoses. All these refinements help to cut maintenance costs and increase reliability.

The H-30 is the only unit of this size and type available with a complete complement of useful attachments including the exclusive Drott 4-in-1 bucket.

The H-30 has a greater horsepower-to-weight ratio than any other unit of this size and type. This provides more useable horsepower for digging, loading and travel operations.

Four-wheel brakes: The H-30 has four-wheel brakes that are equally effective in either forward or reverse. They are sealed against dust and dirt.

The H-30 has many other big PAYLOADER features including two-phase torque-converter, planetary final drives, power-steer, separate parking brake on drive shaft, rear-axle drive disconnect, 43° bucket tip-back at ground, 8'4" bucket-dumping clearance, full rear-axle oscillation. Bucket sizes range from ¾ to 2 cu. yd. (S.A.E. rated).

Your Hough Distributor who sells the complete PAYLOADER line of proven tractor-shovels has one of the finest service and parts facilities in the business, supplemented by Hough factory service personnel.

THE FRANK G. HOUGH CO.
710 Sunnyside Ave., Libertyville, Ill.
Send full data on the Model H-30 PAYLOADER.
Name________________
Title________________
Company________________
Street________________
City__________ State______
12-B-1

THE FRANK G. HOUGH CO.
LIBERTYVILLE, ILLINOIS
SUBSIDIARY – INTERNATIONAL HARVESTER COMPANY

HOUGH, PAYLOADER, PAYMOVER, PAYLOGGER, PAYLOMATIC and PAY are registered trademark names of The Frank G. Hough Co.

HOUGH®

PAYLOADER®

Street cleaning in Council Bluffs includes flushing all streets after sweeping.

Checkerboard Street Cleaning Program

A checkerboard system of sweeper operation in the residential areas of Council Bluffs, Iowa, helps step up the efficiency of this sanitation service. Under this method, the machines clean the streets in eight square blocks and empty their hoppers at one intersection. A tractor-loader then transfers the collected debris to trucks that haul it to the city landfill, where it is stockpiled for use as a cover material. A flusher follows the street sweeper to remove dust or small particles. The city owns two 1,500-gallon flushers, a Rosco and an Etnyre.

In the business district the sweeper unloads at a central point and the debris is hauled away the same night. City crews frequently use this debris to fill low areas in the alleys or holes in the dirt streets.

Street cleaning is a day-and-night operation. We use two Wayne 450 sweepers in the residential areas, normally working them eight hours a day, five days per week. The machines sweep 78 miles of concrete pavement, 14½ miles of asphalt pavement, and 12 miles of brick surfacing. Except for the winter months we try to cover all residential streets once every six weeks.

A crew works the business district between the hours of 11 p.m. and 7:30 a.m., setting aside one night each week to clean eight city-owned parking lots. Because of the one-way streets, a dual-gutter-broom sweeper works best in the business area. Along with street sweeping and flushing in the business district, the crew also cleans the alleys on a regular nightly basis.

To do a more thorough job in the commercial areas, the night crew sets out rubber cones at midnight in the area designated to be cleaned. In the morning the day-crew foreman assigns one machine and loader to cover the designated area before starting the regularly assigned route.

ART SARRATT
Director of Public Works
Council Bluffs, Iowa

Salting Chicago's Transit

Up to $500,000 worth of bulk and bag salt may be purchased by the Chicago Transit Board from the three successful bidders: the Morton Salt Co., 110 North Wacker Drive, Chicago 6, Ill., the International Salt Co., Clarks Summit, Pa., and the Diamond Crystal Salt Co., St. Clair, Mich., if the winter is severe. For this sum approximately 36,000 tons of bulk salt, and 3,150 tons of bag salt could be bought at the identical bid prices of $12.85 per ton for bulk salt and Diamond Crystal's low bid of $21.36 per ton for bag salt delivered by truck.

"We now have about 15,000 tons of bulk salt stockpiled," Chairman V. E. Gunlock said. "Last winter we spent about $983,000 fighting snow and ice to keep service moving. We used 31,541 tons of bulk salt and 3,144 tons of bag salt."

The estimated expenditure for truck rental to supplement CTA's own equipment ranges from $75,000 to $150,000, depending on the severity of the winter. This estimate includes $100 per truck for installing "A" frames to which snow plows may be attached. ◄◄

Stiff Fines for Litterbugs in Philadelphia

On October 13th of this year a new ordinance authorizing fines up to $50 or 30 days imprisonment goes into effect in Philadelphia. The former penalty was a flat $10 fine or 30 days.

The ordinance sets a $50 fine for the following violations: litter thrown from vehicles, falling or blown from trucks, dropped from aircraft, or deposited on private premises, open or vacant lots.

The ordinance also provides that a policeman may issue a ticket under which the recipient admits the violation, waives a hearing and mails in a $5 fine. If he insists on a hearing and is convicted, however, he is subject to a $10 fine or 15 days imprisonment. In this instance the ticket is applicable for: littering public places, placing litter in receptacles in such a way that it may be scattered, sweeping litter into gutters, placing handbills on vehicles, failure to maintain private premises free of litter, placing refuse for collection improperly, or for depositing commercial refuse in a public receptacle. ◄◄

. . . the important element in connecting branch mains . . .
SPEED . . .

MUELLER® Tapping Sleeves and Valves
MUELLER CL-12 Drilling Machine

■ By using Mueller "quality-matched" equipment and machines, you eliminate the need for extra adapters and fittings, thereby reducing set-up time. The automatic power operation of the CL-12 Machine frees the operator for other work around the job-site, and reduces cutting time

■ The total reduction of on-the-job time is one of the big reasons to standardize with Mueller equipment and machines. Ask the Mueller Representative in your area for complete details on this and many other safe, fast operations using quality Mueller products.

SPEED — another
Basic Benefit from . . .

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Factories at: Decatur, Chattanooga, Los Angeles
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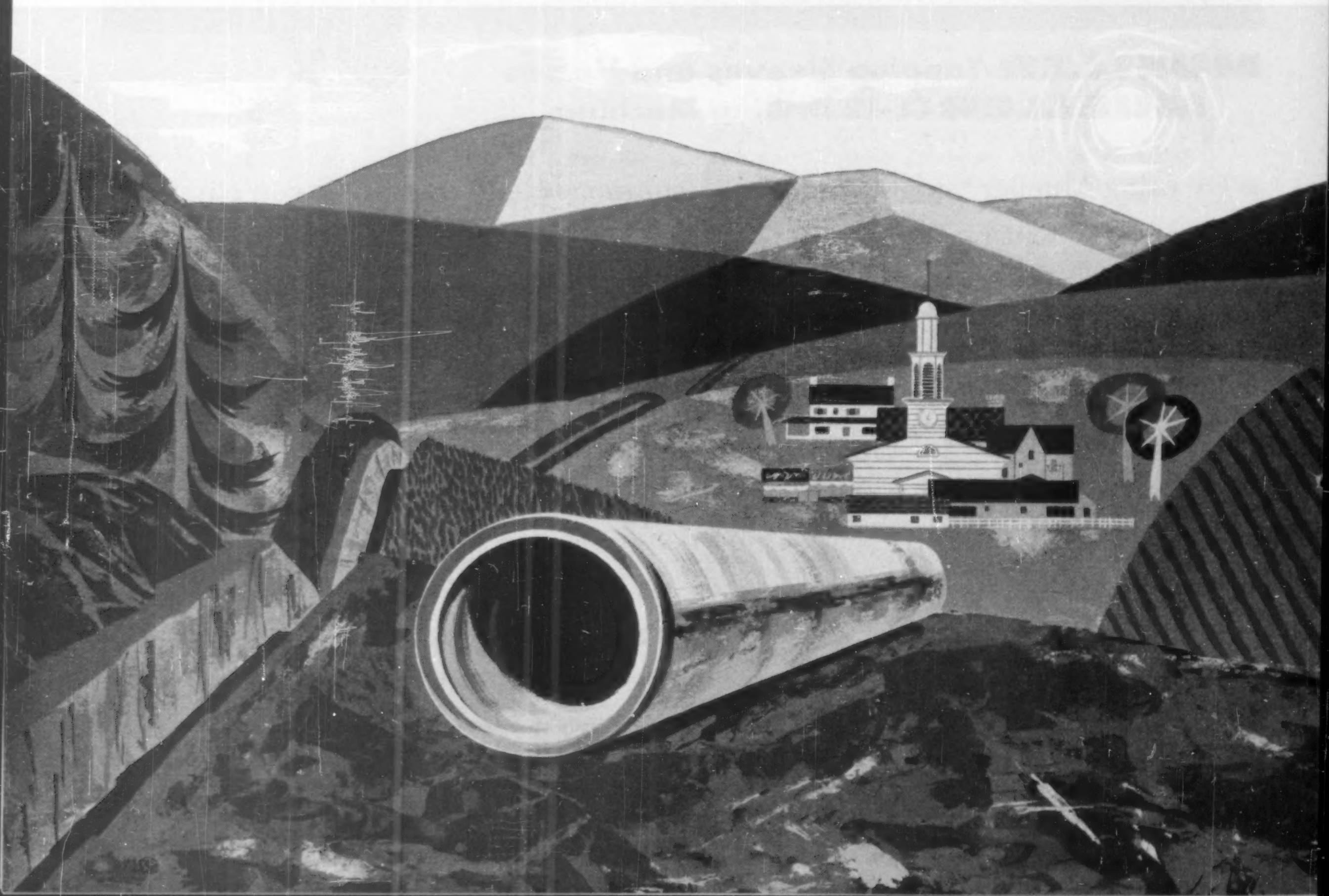
LONG-TERM ECONOMY

$A_s + A_y$ = FLEXIBLE DESIGN

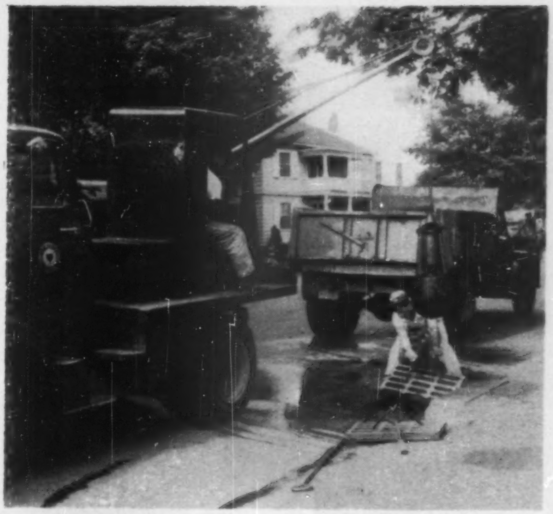
When an engineer designs a complete water transportation system, he must give consideration to the differences in internal pressure caused by changes in elevation, hydraulic gradient, and many other varying operating conditions. American Concrete Cylinder Pipe offers a flexible design to accommodate these conditions through variations in the gauge of the steel cylinder, the diameter of the circumferential steel rod reinforcement, and the center-to-center spacing of the rod reinforcement to obtain the precise cross-sectional steel area required. ■ The cost of delivered water should be measured, not in terms of the initial investment for the system which transports it but in terms of the ultimate cost of that system. With the flexible design of American Concrete Cylinder Pipe, an engineer can obtain a system economical in ultimate cost and enduring in reliable performance. ■ An American sales engineer is ready to show you the advantage of flexible design and a resulting economy for your next project.

American Pipe and Construction Co. • Los Angeles • San Diego • Hayward • Portland
Bogota, Colombia / **American Concrete Pipe Co. (subsidiary)** • Phoenix • Albuquerque
A MEMBER OF THE AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION

American
PIPE AND CONSTRUCTION CO.



How Worcester Cleans Its Catch Basins



Catch-basin cleaning in Worcester costs about $2.40 for every cubic yard of debris removed.

Worcester, Mass., has somewhat more than 10,000 catch basins located throughout the city. Geographically the city is a series of hills and valleys, necessitating the use of large quantities of sand on the streets during the winter months. Each spring rain rapidly washes this sand into the nearest catch basins, making it mandatory that they be cleaned at least once a year.

To accomplish this, the Bureau of Sewers has five Netco catch-basin cleaning machines. Each unit is individually powered by a four-cylinder gasoline engine which drives the swinging and hoisting mechanism, and a compressor which supplies compressed air for the three-foot orange-peel bucket. Normally we use four machines regularly and hold a fifth as a stand-by unit to replace a machine laid up for repairs or maintenance work.

For this work we have one foreman, four cleaning machine operators, four bucket men and one dump man. Each cleaning machine works with two 2½-ton dump trucks. As one truck is being loaded the other proceeds to the dump, permitting the cleaning machine to operate continuously.

Experience has shown that it is almost impossible to clean basins during freezing weather. For this reason our program usually starts during the last week in April and continues until the middle of November. As the number of basins increases, we add more machines to do the work in the allotted time. To expedite the cleaning of basins in congested areas, the machines start at 5 A.M. during the month of June when daylight is available at that early hour.

Following is the summary of cleaning activities for the year 1959:

Number of basins cleaned	**7,183**
Number of basins inspected (not cleaned)	**1,891**
Cubic yards of refuse removed	**19,372**
Total cost of operation	
(Labor $22,625.47	
Hired truck—$23,637.41)	**$46.262.88**
Cost per cubic yard of refuse removed	**$ 2.38**

Not appearing in the above summary is the cost of operating and maintaining the cleaning machines. This cost is estimated to be $2,500.00 for the season.

George E. MacDowell
Superintendent
Bureau of Sewers

Sewer Service Charges In Texas Cities

Financing of sewerage service for residences and commercial establishments in Texas cities is gradually being shifted from the general tax fund, based on the property tax, to service charges based on the use made of the sewerage facility.

This trend among Texas cities of all sizes is established in a detailed research report which was released to member cities by the Texas Municipal League at Austin.

Separate charges for sewerage service were rare in the nation and in Texas until the past 20 years, but the League shows that today all but eight of 347 Texas cities surveyed employ such charges.

The Texas Municipal League study shows that of the 347 cities surveyed:

—78 cities use a combination of rate methods.
—130 use flat rates.
—110 cities base their rates on the number of fixtures.
—21 cities base both residential and commercial rates on water use.

The prevailing trend in Texas—following the national trends—is toward use of metered water use as the rate basis.

Among the top ten cities in Texas, six made no sewerage charges in 1939—now only two do not specify separate charges. Six of the ten are using water consumption as the charge basis now where only two did so twenty years ago.

Smaller cities, the survey indicates, tend to rely on flat rate charges.

One city in six will extend sewerage lines to the owner's property-line without charge. About one in five makes extensions on a participation basis and nearly half the cities maintain a schedule of distances which lines will be extended without charge—the most common distance being 500 feet. ◄◄

Why this "magnetic" meter attracts more revenue

Since Rockwell first introduced the Sealed Register meter, the center of attraction has been its magnetic drive. But this magnetic principle does a lot more than attract the eye. It attracts more revenue, especially at low flows. That's because there is no friction from a conventional stuffing box, gear train, driving dog or register—all of which cause a drag on the measuring chamber.

This meter attracts substantial savings in maintenance, too, through having fewer parts—only two of which operate in water.

Another big attraction is the hermetically sealed register which cannot fog or become dirt encrusted—hence is always easy to read.

Now you can get these "magnetic" meters in a complete range of sizes from ⅝" through 2". In any size, or for any service, these meters will attract more revenue to you. Write for catalog. Rockwell Manufacturing Co., Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Company of Canada, Ltd., Guelph, Ontario.

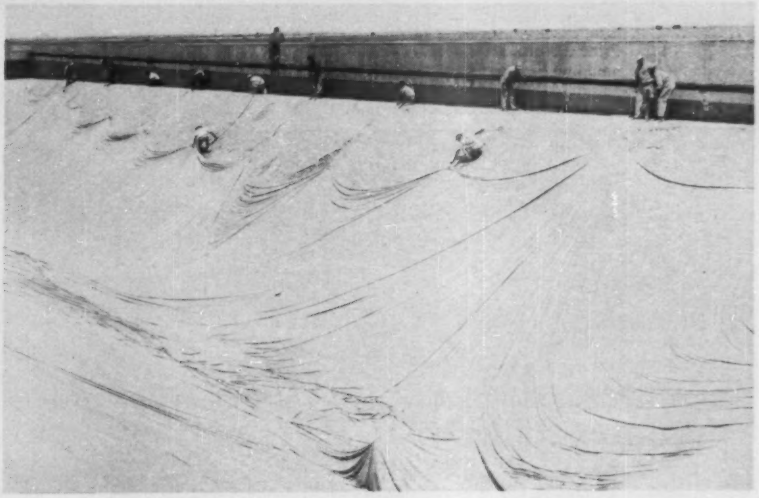
POWERFUL MAGNETIC DRIVE

Illustrating how the driver magnet (shown in hand) revolves around a watertight compartment at the base of the register to push the follower magnet, which in turn drives the register shaft.

SEALED REGISTER METERS

another fine product by

ROCKWELL



Workmen spread out the huge sheet of tissue-thin vinyl plastic which weighs only 20 ounces to the square yard. This type of installation saved about $5,000 over conventional construction methods.

Plastic-Lined Reservoir Floor

A pre-fabricated liner one-half acre in size serves as the sole retainer for 2,000,000 gallons of water in a new reservoir constructed on the edge of the Mojave desert in California. Made of Koroseal vinyl plastic sheet, light gray in color and 20 thousandths of an inch thick, it covers the bottom and 45° sloping sides of the 220-foot-long-by-77-foot-wide reservoir. A seven-foot wall around the 20-foot-deep basin gives it a maximum depth of 26 feet.

Electroseal Plastics of Los Angeles fabricated the huge sections of plastic into one piece having an area of 21,680 square feet for Globe Linings, Inc., 340 East Wardlow Road, Long Beach 7, Calif. Installation involved special techniques to handle the 4,000-pound liner and it was laid over the bare, pre-tamped earth.

The liner, folded something like a road map, was first laid down the middle length of the reservoir floor. Workmen standing around the rim of the basin then pulled the liner up the sloping sides with ropes attached to the liner's edge. The final step consisted of making a water-tight seal between the edge of the liner and the base of the concrete wall.

R. G. Lunt, manager of the Waterworks & Utilities Division, Department of County Engineers, Los Angeles, proposed the idea of using plastic in reservoir construction. Techniques for handling the Koroseal vinyl plastic sheet were developed in cooperation with the plastics department of B. F. Goodrich Industrial Products Company. The reservoir supplies water to Lancaster, Calif. ◄◄

A Valve for Brasilia

The Milwaukee Water Department found itself playing a key role in the completion of the water system for Brazil's new capital city and the way it ended, everybody was happy. Milwaukee was glad to get $50 for valves that it was ready to scrap. A Milwaukee manufacturer was glad to live up to his reputation for giving unusual service. And Brazil was glad to get the valves.

Brasilia, the world's newest capital city, needed a water system. But when its new system was placed in use, the valves failed immediately since they were not constructed for the unusually high 250-pound pressure which the lines contained. Although the valves were not Allis-Chalmers, nevertheless the Brazilian engineers called in Sansao C. Pereira of Rio de Janeiro, that company's distributor in Brazil, and Lewis Fry of Sao Paulo, the factory representative. These men contacted the main office in Milwaukee, and fortunately Charles L. Babb, chief engineer of A-C's centrifugal pump department was blessed with a long memory.

He recalled that in 1931, Milwaukee had laid a high-pressure water system for fire-fighting purposes in the downtown area, using 20-inch valves of 250-pound capacity. He also recalled that Milwaukee had abandoned this system two years ago.

When this information went back to Brazil, President Kubitschek immediately dispatched the two men to Milwaukee to bring valves back to Brasilia at any cost. Emergency manufacture of them would have required at least a month.

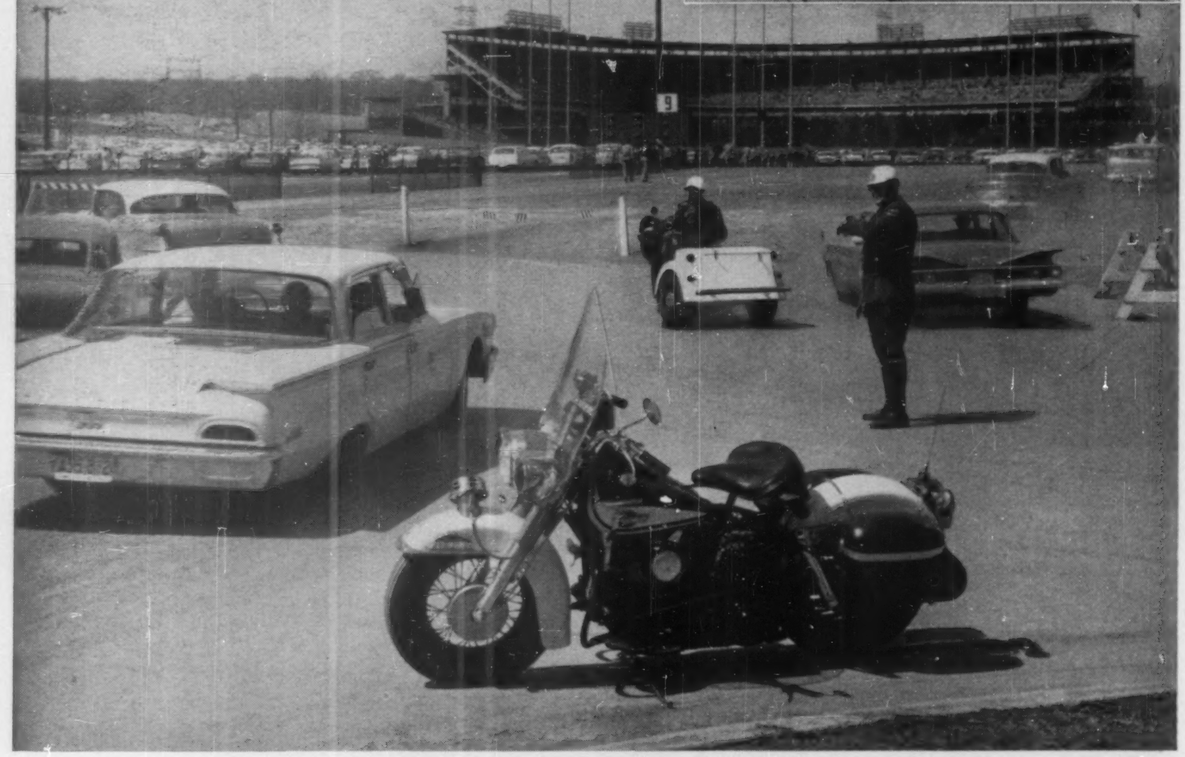
When this urgent need of the Brazilian Government became known, Milwaukee's Assistant Water Superintendent, Elmer Becker, arranged to have the system capped after removal of the valves. The City Purchasing Department placed a price of $50 on each of the vâlves and a firm of movers started transporting them to Brasilia by chartered plane.

Only four valves were involved altogether; nevertheless, we are glad that a bit of Milwaukee is in Brazil's capital city, helping to make it a success.

ANDREW L. LEHRBAUMMER
City Purchasing Agent
Milwaukee, Wis.

Stretching the long arm of the law in Milwaukee

Milwaukee, Wisconsin — This metropolitan area of over a million is justly proud of its traffic safety record and its police department. In 1959, the city had the lowest fatality record ever achieved by a community over 250,000. Service and maneuverability of its 80 Solos and 37 Servi-Cars are cited as important factors in Milwaukee's effective traffic control program.



OPENING DAY FOR THE BRAVES — It takes only an hour and a half to park approximately 10,000 cars at Milwaukee's County Stadium when officers mounted on Harley-Davidson Solos and Servi-Cars are on the job.

The force that made Milwaukee famous...

moves on Harley-Davidson Servi-Cars and Solos

Mobility is the key to successful law enforcement! Harley-Davidson police motorcycles supply this maneuverability when only minutes count. They stretch the arm of the law to reach any part of the community quickly whether the trouble spot is traffic, crime, fire or other emergency.

Harley-Davidsons *balance* your effectiveness: *Solos* are the ideal pursuit vehicle. Nothing stops these maneuverable two-wheelers from arriving on the scene of trouble . . . fast. Busy *Servi-Cars* are triple-threats for traffic control . . . parking and meter work . . . residential patrolling. Call your Harley-Davidson dealer, or write Harley-Davidson Motor Co., Milwaukee 1, Wisconsin, for free folder on effective police mobility — the Harley-Davidson way.

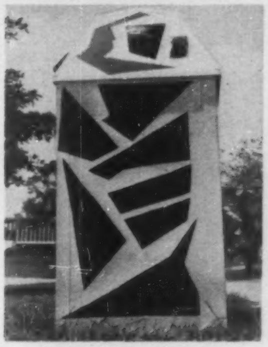
HARLEY-DAVIDSON
Police Motorcycles

Artistic Refuse Containers

Nobody is completely sure yet whether art on the trash containers is a good idea. But down in Florida, the University of Miami's campus engineer, Hart Morris, thought it was worth a try. As far as he could see, the students at this sun-kissed campus made a tradition of ignoring the conventional green and orange containers, painted the school colors, previously distributed around the campus.

So Mr. Morris appealed to the University's Art Department. Prof. Jerry Frankel proposed that his students paint the containers with eye-catching cartoons, but nevertheless gave them wide latitude. The result was an array of widely impressionistic designs and a few cartoons.

Apparently the new decorations have been well received. This fall Mr. Morris is asking the students to decorate 30 additional containers, making a total of 60 examples of abstract and impressionistic art designs decorating the sides of United Metal trash receptacles on the campus. ◄◄



This fall the University of Miami has 60 trash containers decorated in a way that art students feel will persuade passersby to help keep the campus clean.

Photos courtesy Miami Herald

How Cities Dispose of Bulky Wastes

Twenty-four cities in the over-400,000 population category answering a questionnaire on bulky-refuse disposal practices provided the following data:

Ten cities allow open burning of demolition lumber on the building sites, usually under permit from the city fire departments. Two cities own equipment to reduce demolition lumber mechanically to sizes suitable for charging into municipal incinerators. The most common practice is haulage to landfills and dumps. Thirteen cities permit burning at the dump, the others practice land filling without burning.

Nine cities reduce tree branches to incinerator size but the heavier tree remains are hauled to dumps where they are burned by 12 cities and buried without burning by the others.

Six cities shred and incinerate mattresses, old furniture, crates and cartons, while nine cities burn them on dumps. Most of the reporting cities use sanitary landfill for disposal of these items.

While 17 communities report disposal of metallic refuse by sanitary landfill and three cities resort to the open dump, 14 of the reporting cities permit junkers to salvage some metals from old refrigerators, washing machines, stoves and other appliances.

Eleven cities reported air-pollution problems resulting from municipal burning of bulky refuse compared with eight which reported no air-pollution problems.

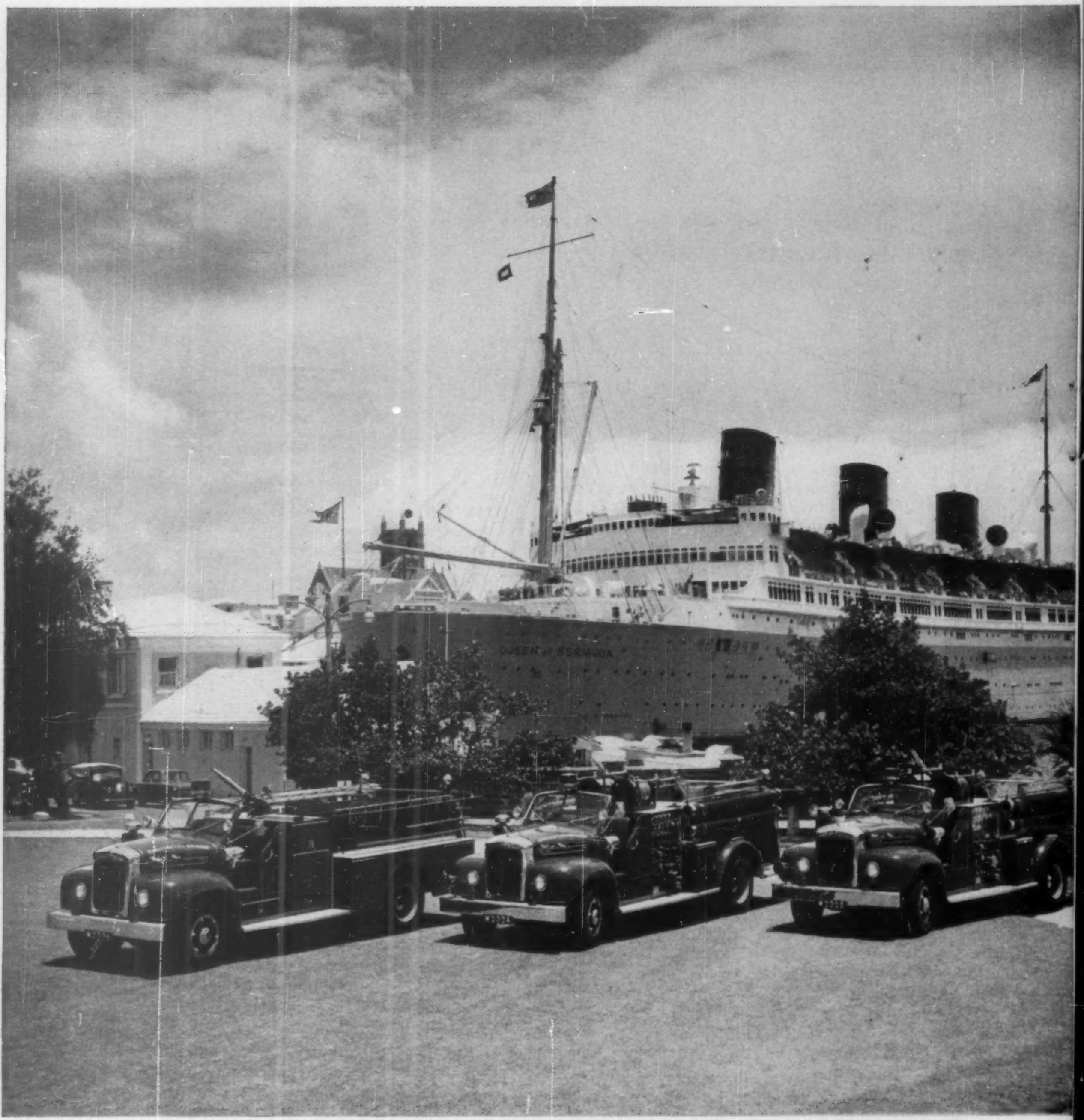
The results of the questionnaire and other data on bulky refuse disposal were reported in a paper by E. R. Kaiser, Senior Research Scientist, and J. Tolciss, Associate Research Scientist, College of Engineering, New York University, at the 1960 annual meeting of the American Public Works Association. ◄◄

Two Municipalities Make Refuse Pact

The New Jersey municipalities of Metuchen and Edison Township have entered into a joint agreement for using a common garbage and trash disposal area. This is the first time that two municipalities in New Jersey have banded together for such a purpose, according to Samuel P. Owen, Chairman of Metuchen's Department of Public Works.

Metuchen, a residential community of 2.5 square miles, has no area satisfactory for dumping refuse. Edison Township has an area of 33 square miles and completely surrounds Metuchen. The township has over 700 acres of marginal swampland that it wishes to fill and to use for productive purposes. The two communities signed a joint contract to allow Metuchen to deposit all of its refuse in the Edison Township dump for a period of five years.

The disposal area will be operated as a sanitary fill. New Jersey state law prohibits the use of open dumps. ◄◄



FIRST DIESEL FIRE APPARATUS built by major manufacturer who makes both apparatus and own diesel engine are these three units recently delivered to Hamilton Fire Brigade, Hamilton, Bermuda. Two 1250-gpm pumpers at right have supplementary front suction, 200 gal. booster tanks and two hose reels each. Hose wagon and equipment carrier at extreme left carries 8400 ft. of English fire hose (6000 ft. 2½", 1200 ft. 3½", and 1200 ft. 1½" hose), and equipment such as forcible entry tools, cutting torches, gas masks, resuscitators, and smoke ejectors. All three units have 230 hp turbocharged Mack-built Thermodyne diesel engines, Fire Department quick build-up air brake systems, 24-volt electric starting systems, and 100 amp. alternators.

COMPLETE LINE OF PUMPERS—500 to 1250 GPM...SQUAD AND HOSE WAGONS...AERIALS 65′ to 146′...COMBINATION LADDER TRUCKS

Versatility at work...

Mack diesel apparatus help solve Bermuda's fire protection problem

For the first time in the history of American apparatus manufacture, a major maker of fire-fighting equipment has installed a diesel engine of its own manufacture in fire apparatus.

The place? Hamilton, Bermuda.

The reason? Only 21 sq. mi. in land area, Bermuda has limited storage space for fuel . . . must extract from the fuel it brings in the greatest amount of work.

Thus Hamilton poses a special problem in fire protection. For as Bermuda's requirements call for heavy-duty apparatus with large pumping capacity, they likewise call for powerplants which use the least fuel possible.

That means diesels—which require far fewer gallons of fuel per engine hour. And that means Macks, for the world-famous Thermodyne® diesel engine has already proved itself in millions of miles of highway and city service . . . is why Mack is acknowledged as the leader in diesel-powered vehicles.

It means Mack fire apparatus for other reasons, too. Because Mack makes more of its components—engines, transmissions, rear axles and rear four-wheel-drive tandems—Mack is more able to custom-build its fire apparatus to the standards of a single department, as it has for Bermuda.

Every department needs the best possible equipment to protect against fire. And that equipment is Mack. No other apparatus manufacturer can be so versatile . . . no other apparatus can be "Built like a Mack!" Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ont.

7878

MACK FIRST NAME FOR **FIRE APPARATUS**

PROTECTING PEOPLE AND PROPERTY, Hamilton's three diesel-powered Mack apparatus are shown in front of one of resort island's many modern hotels to which tourists from all over the world are attracted. Tourism is the staple of Bermuda economy, and most modern, most efficient fire apparatus is used for best protection.

Despite acid fumes and Ohio winter...

M50® paint applied in Spring matches color of *M50* paint applied previous Fall

One of the many outstanding properties observed during National Lead exposure tests of *M50*® basic lead silico chromate pigment paints was a remarkable resistance to fading. The practical value of this property is brought out by an event in the repainting of The Harvard-Dennison Bridge in Cleveland, Ohio.

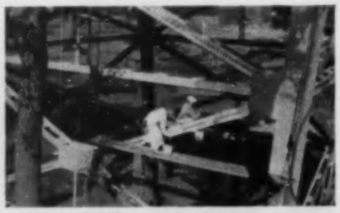
At the close of the 1958 painting season, this repainting had been only partly completed. In Cleveland, that Winter was particularly hard on paint . . . periods of heavy precipitation and cold alternating with warm, sunny days. And . . . notice the smoke in the picture above... this particular bridge lies in the direct path of acid fumes from the stacks of a nearby chemical plant.

Despite all this, when the contractor began to paint again in the Spring, no color difference could be detected at the boundary between the previously applied *M50* paint film and the new.

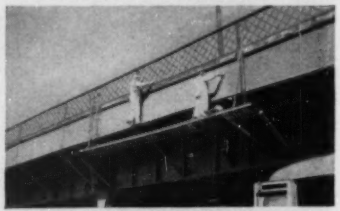
What makes this color retention so remarkable is that it is obtained in a finish paint that also provides the rust inhibition of a standard primer. Only paints made with basic lead silico chromate pigment combine the anti-corrosion action of a primer with the weather resistance, durability and tintability of a finish paint.

Now, for the first time . . .

Paint suppliers are providing states, counties and municipalities with true "Defense-in-Depth" against corrosion . . . paint systems with an active rust inhibitor, basic lead silico chromate, in *all* coats, primer, intermediate and finish. If you are not yet acquainted with these modern paints, ask your regular suppliers about them. They're setting new standards for durable metal protection.



Applying *M50* alkyd primer coat over commercially sand-blasted surface.



Grey *M50* alkyd finish coat goes on with complete color uniformity.

M50 an **oncor**® *Pigment... A Development of*

National Lead Company

General Offices: 111 Broadway, New York 6, N.Y.

Mock Trial of Cities Emphasizes Need for More Urban Renewal

Cities of the nation were subject to a mock trial recently, at the annual meeting of the Mortgage Bankers Association of America. The cities were defended against the charge that they were "criminally negligent in permitting urban blight to grow unchecked." However, their citizens, particularly business leaders, were accused of failing to exert greater influence to preserve and promote municipal well being.

Samuel E. Neel, general counsel of the mortgage banker's group, served as prosecutor. He charged that cities did not use the tools that they already had — building and housing codes, zoning regulations, and orderly city planning—to upgrade conditions. Four "witnesses" agreed with the charge of lack of leadership plus public apathy. One of these, S. Leigh Curry, Jr., general counsel for the Urban Renewal Administration, "testified" that the government had authorized more than $2,000,000,000 for this work, and that 455 municipalities are participating in some 800 projects. However, he agreed that this is only a beginning, and that renewal is more than a construction project.

Julian H. Levi, executive director of the South East Chicago Commission, "testified" that the cities of America are like an indifferent, careless housekeeper, a wastrel, a coward. They fail to keep their streets clean, their air free of noise and pollution, they do not understand good architecture, and lack sufficient boldness to take corrective action. He also said that it was not too late to enforce modern building and zoning codes, to clear slums and create schools, parks and playgrounds. He asked also that traffic be diverted around the community to restore quiet to city living.

Mayor Leo P. Carlin, "witness" from Newark, observed that many states still regard their cities as stepchildren. But he also said hopefully that some are starting to recognize their responsibilities. He warned that the local property tax no longer was adequate as a source of revenue, but also added that "while we may look to the federal government to play fairy godmother, her magic wand is so hung with red tape that our Cinderella Cities have little time to dance at the ball."

Judge for this "trial" was James W. Rouse, president of ACTION, Inc.—the National Council for Good Cities. ◄◄

Air Pollution Control Notes

Car Exhaust Problem

L. Arnold Nicholson, Chairman of the Philadelphia Air Pollution Control Board, has announced that a special committee has been formed to study the problem of automotive exhaust pollution and its contribution to the pollution of that city's air. Nicholson estimates that about half of the gases and vapors in the city's atmosphere are caused by motor vehicles.

Bay Area Ratifies Budget

The Board of Directors of the Bay Area (San Francisco) Air Pollution Control District have unanimously adopted a budget of $560,400 for the fiscal year 1960-1961. Each of the counties in the District pays a share of the total budget.

Asthma

Two Tulane University professors, Dr. Murray Gilkeson, Jr., and Dr. Edward Cleve, reported recently that air pollution in New Orleans causes the number of asthma sufferers in that city to increase by more than 150 a day, according to a study they have just completed. Dr. Cleve said that air pollution brings increased death rates from chronic bronchitis and lung cancer.

West Virginia Places Samplers

Eight high-volume air samplers have been installed in the Kanawha Valley in and around Charleston, West Virginia, to sample the air of the section in accordance with the standard measurements of the United States Public Health Service. Dr. Page Seekford, City-County Health Director, said that first reports of findings will be made six months to a year from the date of installation in order to insure a thorough study of the results.

Smog-Free Area Expects Contamination

John Maga, chief of the California State Bureau of Sanitation, announced recently that the San Joaquin Valley will be the next to experience a concentrated invasion of smog. He said the elements contributing to air pollution—increasing population, stable air conditions and automobiles—are all present in the valley, which contains the only metropolitan areas in the state (Stockton, Fresno and Bakersfield) which have escaped the smog problem thus far.

No Laws for Norfolk

City and business officials in Norfolk, Va., are in apparent agreement that there is little expectation of air pollution control laws in that city but that a cooperative attack on the problem should be worked out between government and industry. In a recent report, the Norfolk Chamber of Commerce subcommittee on air pollution said that local and state laws "controlling air pollution are vague and difficult to enforce." It added: "It seems (the laws) are not needed at the present time, due to the cooperative effort of most industrial plants." City Manager Thomas F. Maxwell said that no action is contemplated by the City Council to establish a definite air-pollution program. Air samplings indicate that suspended particulate matter in the air of Norfolk increased 22% from 1957 through 1959.

Coal Industry Appoints Staff

A full-time staff of air pollution control experts has been appointed by the bituminous coal industry, it has been announced by Harry C. Ballman, director of the Air Pollution Control Department of the National Coal Association, Washington, D. C. The new staff is able to keep in touch with local control officials and to solve problems common to several sections of the country, Mr. Ballman said.

—Prepared by Kenneth Kowald

"I bought another Sherman Digger because...

...since 1953, when I got my first Sherman, I have owned a total of five. The power and maneuverability of the Sherman make it easy to adjust to extreme variances in soil and terrain. The self-equalizer stabilizers also help in this respect. Then, too, the Sherman is faster than competitive makes and service and parts are always available. The jobs I have done range all the way from digging a road up the side of a mountain to digging inside San Quentin prison for an electrical contractor. We like the Sherman because we know what we are getting!"

Harold Withers, Withers & Wight Excavating,
San Rafael, Calif.

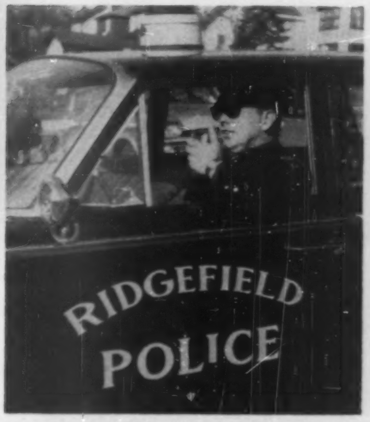
Get all the low cost details from your dealer, or write Allied Equipment Department, Ford Motor Company, 2500 E. Maple Rd., Birmingham, Mich.

SHERMAN

POWER DIGGERS • LOADERS • AUXILIARY TRANSMISSIONS

←

A control point in his office enables Chief Gallagher to handle emergencies quickly.



After completing his assignment, the officer radios in for the next order.

Ridgefield Police Install New Transistor Radios

Away back in 1938, the City of Ridgefield, N. J., installed radio receivers in its police cars. Four of the cars are now equipped with two-way transistorized units. Other radio units are in operation in two unmarked cars and a jeep used for night patrolling by reserve members of the force and in emergencies.

Cost of these new units is approximately $300 more than conventional tube radios, but transistorization reduces radio operating costs over the life of the sets to more than offset the higher initial investment. Tube and vibrator failures cause most radio outages. In our radios, the vibrators and nearly all the tubes have been replaced by the tiny transistors, which are solid-state semiconductors with no moving parts. Operating at low current levels, the transistors seldom burn out.

This is important to the city since the breakdown of a radio means that the car must be put out of service as well. Ridgefield makes use of all its cars on a 24-hour a day basis, making the loss of any one, even temporarily, a serious inconvenience.

The city has contracted the servicing of its radio equipment to Motorola, which has subcontracted the actual work to an authorized service station near Ridgefield. This station has a full staff of experienced technicians who not only handle all emergency calls but also provide periodic preventive maintenance to catch possible future outages. Contract maintenance rates of these radios have been automatically reduced, an out-and-out dollar saving.

On standby, the drain of the radio is less than an ampere. This means patrol cars can be parked while investigations are carried on or while traffic is being directed, without the need for running the engine to monitor the radio for other important calls. Two money-saving benefits are: 1) less gasoline since it is not necessary to idle the engine; and 2) engine wear and tear is reduced. Each of our vehicles is driven 55,000 miles a year, and the equivalent of an extra 20,000 miles are put on each in engine idling. The extra "miles" are eliminated with transistorized radios. Eliminated too are the costs of gasoline for wasted miles as well as costs in overhaul made necessary by the extra mileage.

With the old radios, the city averaged a replacement of one new battery per week. Now, battery replacement is rare.

Audio output of the transmitter of the new units is increased—another benefit to the city police force. While directing traffic at the scene of an accident recently, the policeman was able to hear all messages that came over his radio, even though the car had been parked on the highway 100 feet away.

The Motrac radios are mounted on a shelf in the trunk. One-half the size of conventional tube units, they take up very little space. This is important to the force because a complete supply of rescue and first-aid equipment is carried in each car.

In addition to the mobile radios, the system consists of a 60-watt Motorola base station and antenna mounted on the city hall. Including tower, the antenna rises 75 feet. Three dispatching points have been established by the Police Department. Besides the main dispatching point, remote facilities have been set up in the chief's office and in the teletype room.

Walter W. Gallagher
Chief of Police

Have You Problems?

These Free Booklets Will Help You

Check over these listings which will provide you with important up-to-date information on equipment and services that will assist you in solving municipal problems.

Write to address given or circle corresponding number on free post card on page 53.

Accessible Water Meters

667 To speed meter reading, BADGER METER CO., 4545 W. BROWN DEER RD., MILWAUKEE 23, WIS., is offering Read-o-Matic, a meter that is installed outside, eliminating the need for down-hole, indoor metering. Write for illustrated brochure.

Pedestrian Signals

668 . . . which give neon grid, bent tube, or incandescent lights to suit your traffic control needs and are light in weight, rugged, corrosion and weather resistant, are available from ECONOLITE CORP., 8900 BELLANCA AVE., LOS ANGELES 45, CALIF. Write for brochure.

Hydraulic Drill for Streets and Runways

669 Mark V is the only diamond coring machine designed for production type concrete test coring on streets, runways or other masonry slab. For details on a complete line of drills and soil sampling tools, write MOBILE DRILLING, INC., 960 N. PENNSYLVANIA ST., DEPT. 9, INDIANAPOLIS 4, IND.

Loader Uses Unlimited

670 The Payloader pays its way year-round. It is useful anywhere in the city handling materials for street construction and repairs, at your park, land-fill or incinerator, or for snow clearing or removal. For details write FRANK G. HOUGH CO., 710 SUNNYSIDE AVE., LIBERTYVILLE, ILL.

Fibres for Your Street Sweepers

671 A wide variety of domestic and imported fibres and tough durable guttter wire for your power sweepers is available to fit your particular needs from the huge warehouse stock of A. STEIERT & SON, INC., HATFIELD, PA. Write for more information.

Prepackaged Electric Plants

672 For a prepackaged electric generating plant that has passed a tough test to assure you the full power, voltage and frequency regulation promised, write for details to D. W. ONAN & SONS, INC., 2700 UNIVERSITY AVE. S. W., MINNEAPOLIS 14, MINN.

Tractor Shovels

673 . . . made by the TROJAN DIV., YALE & TOWNE MFG. CO., BATAVIA, N. Y. are proving their ability to perform at the poles or in cities all over the globe. Its tractor shovels come in eight models with lifting capacities from 6,000 to 24,000 pounds. Write for further details.

For Street Construction

674 An interesting and informative news bulletin describing street construction and maintenance as practiced throughout the country is published by HUBER-WARCO CO., MARION, OHIO. The company will gladly send you a copy.

Corrosion-Proof Electrical Conduit for Municipalities

675 Because Alcoa electrical conduit is corrosion resistant it was installed in Cleveland's Easterly sewage treatment plant, at water purification plants, on docks and at airports throughout the country. For details write for Bulletin 75-10283 to ROME CABLE DIV. OF ALCOA, ROME, N. Y.

Clear Out Those Weeds

676 Here is a way to clear away those troublesome weeds from public grounds wherever they are a problem, with R-59 made by ZEP MANUFACTURING CORP., 1310 SEABOARD INDUSTRIAL BLVD., ATLANTA, GA. It penetrates soil, killing buried seeds, rootings, keeping areas weed-free. Write for details.

Unbreakable Globes for Street Lighting

677 A new unbreakable pendant-type street light globe of the upright type has been introduced by COMMERCIAL PRODUCTS DIVISION, PLASTIC AGE SALES, INC., 14300 DAVENPORT RD., MINT CANYON, CALIF. Made of polyester resin, reinforced with fibre glass, they withstand vandalism and save time and expense on globe replacement.

Chemical Grout for Sewer Lines

678 A new concept in soil stabilization and grouting, AM-9 which may be applied to any material through which water flows is now being offered by AMERICAN CYANAMID CO., 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y. When applied around sewer pipe it seals soil preventing the passage of water into or out of the pipe. Write for descriptive literature.

Rigid Pipe for Submersible Pump

679 To save 50% to 75% of costs in installation of submersible jet pumps write for information from MARBON CHEMICAL DIV., BORG-WARNER, WASHINGTON, W. VA., on its rigid pipe made of Cycolac. Said to out-perform conventional pipe, it is rustproof, highly tensile, swiftly installed.

Refuse Containers That Last

680 One-piece expanded metal construction with smooth ring edge for strength, welded reinforcing bands and ribs, galvanized or vinyl finish for long life with rugged bottom are some of the features of the refuse containers made by WHEELING CORRUGATING CO., WHEELING, W. VA. Write for details.

Manual on Tylox Pipe Joints

681 City officials concerned with constructing sewerage systems will want a copy of a new manual offered by HAMILTON KENT MFG. CO., 427 W. GRANT ST., KENT, OHIO, describing the advantages of Tylox jointing for tongue-and-groove, bell-and-spigot, offset and recessed pipe.

You Can Revive Water Wells

682 . . . by using hydro-sonic shock waves which break up scale, deposits and growths that plug up your well and prevent free water flow. In this way you increase flow and pump efficiency, decrease draw down and pump costs. For details write HALLIBURTON CO., DUNCAN, OKLA.

An Instant Fire Alarm

683 . . . is automatically transmitted to all fire personnel when a Gamewell fire alarm box is "pulled." No one has to speak a word. For details on how you can get this rapid fire alarm protection write to THE GAMEWELL CO., 1270 CHESTNUT ST., NEWTON UPPER FALLS 64, MASS.

75 Years in Chemicals

684 Celebrating 75 years in chemical manufacture STAUFFER CHEMICAL CO., 380 MADISON AVE., NEW YORK 17, N. Y. has published a booklet describing its products which include chemicals for water and sewerage treatment. Write for your copy.

Trenchers, Tractor Attachments

685 A new 6-page folder covering the complete line of Parsons-Shawnee products has been released by the PARSONS CO., NEWTON, IOWA, manufacturer of trenchers and utility tractor attachments. (Parsons is a division of KOEHRING CO.) Write for your copy.

Pool Enclosure

686 You can double the comfortable swimming season of your municipal pool by enclosing it with a Swim-Mor pool enclosure made of 8-mil-thickness polyethylene by LORD & BURNHAM, IRVINGTON, N. Y. To extend the season further a heating package is offered. Write for complete details.

Brilliant Reflective Beads for Traffic Signs and Lines

687 . . . are the lead-free, whitest-white beads which are the result of years of research and technological knowhow by FLEX-O-LITE MFG. CORP., 8301 FLEX-O-LITE DR., ST. LOUIS 23, MO., makers of drop-in, free-flowing, moisture-proof, high and medium index sign beads. Write for new brochure.

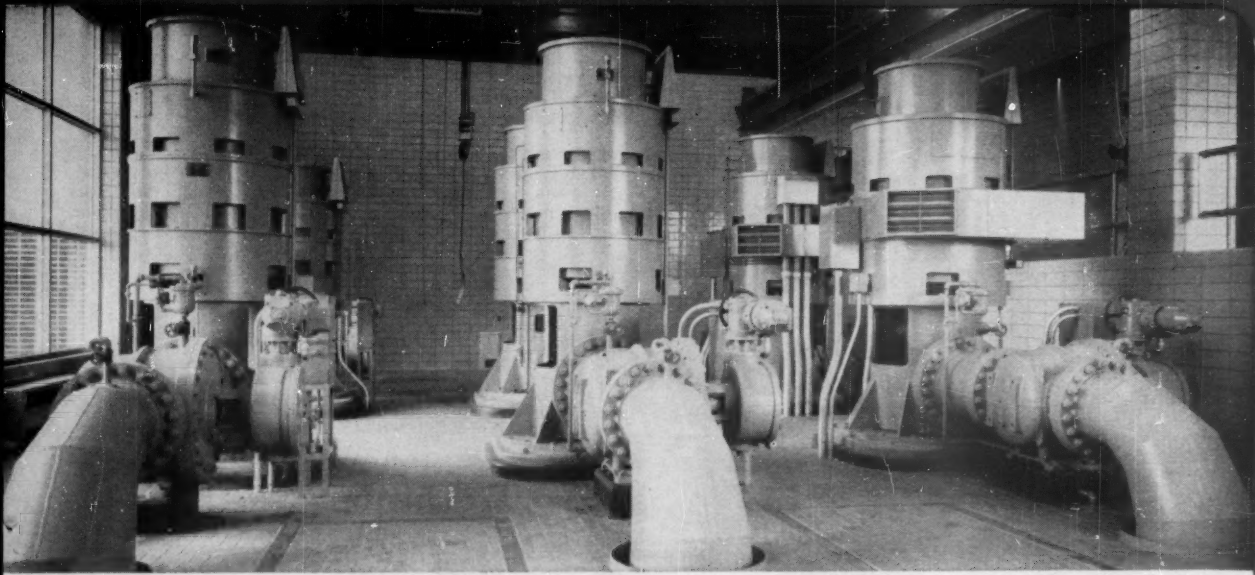
Work-Load Lift

688 Here is a device that will lift men and materials and allow them to perform the numerous high-up maintenance or construction jobs that must be done in your municipality. To get information on the Skywitch, write CHARLES MACHINE WORKS, INC., PERRY, OKLA. Lifts can be custom designed for your needs.

New Plastic Firebrick Bulletin

689 . . . #982 tells how to repair incinerators easily and well by using Super Plastic, Plastic Regular and Chrome Plastic Firebrick. It shows advantages, and recommended installations. Write for your copy to J. H. FRANCE REFRACTORIES CO., 9230 FRANCE RD., SNOW SHOE, PA.

(See page 41 for more Bulletins)



PLENTY OF **WATER** for Springfield-66 MILLION GPD Max.

Springfield, Ohio has a completely new, automatic water supply system by Layne. It guarantees 66 million gallons per day for their present and future needs—a job complete by Layne—and a completely satisfied customer. Field Tests exceeded the guaranteed pump efficiencies by 1% to 2% on all units. Consulting Engineers: Black and Veatch, Kansas City Missouri. Water Supply Contractors: The Layne Ohio Company, Columbus, Ohio. Do you need complete water service? Get it from Layne. Write for Bulletin 100.

Specifications

RAW WATER—10 Layne Gravel Wall Wells with Layne 18-8 Stainless Steel shutter screen and 10 Layne deep well pumps. 2800 GPM — 65 ft. TDH, 75 hp—440 Volts— 1750 RPM, located in two banks pumping to the filter beds. Pumps were installed 15 feet above ground level for flood protection.

FILTERED WATER—Six Layne high service pumps boosting filtered water into distribution system. Five are 12 MGD-285 ft. TDH, 700 hp—4160 volts—1185 RPM. Two are variable speed units. The sixth Layne Pump is a 6 MGD-285 ft. TDH, 400 hp—4160 volts—1185 RPM. All pumps operate through the central control panel.

LAYNE OFFERS COMPLETE WATER SERVICE: Initial Surveys • explorations • recommendations • site selection foundation and soil-sampling • well drilling • well casing and screen • pump design, manufacture and installation construction of water systems • maintenance and service • chemical treatment of water wells • water treatment—all backed by Layne Research. *Layne services do not replace, but coordinate with the services of consulting, plant and city engineers.*

City of Springfield, Ohio

Layne
SINCE 1882

WORLD'S LARGEST WATER DEVELOPERS

LAYNE & BOWLER, INC., MEMPHIS
GENERAL OFFICES AND FACTORY, MEMPHIS 8, TENN.

LAYNE ASSOCIATE COMPANIES
THROUGHOUT THE WORLD

Sales Representatives in Major Cities

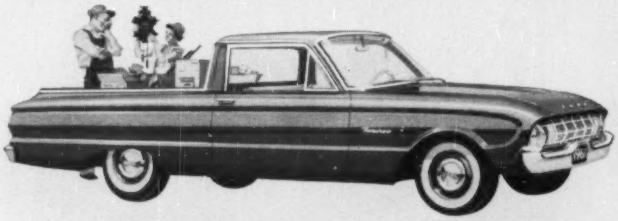
ECONOMY NEVER CAME IN SUCH A CHOICE

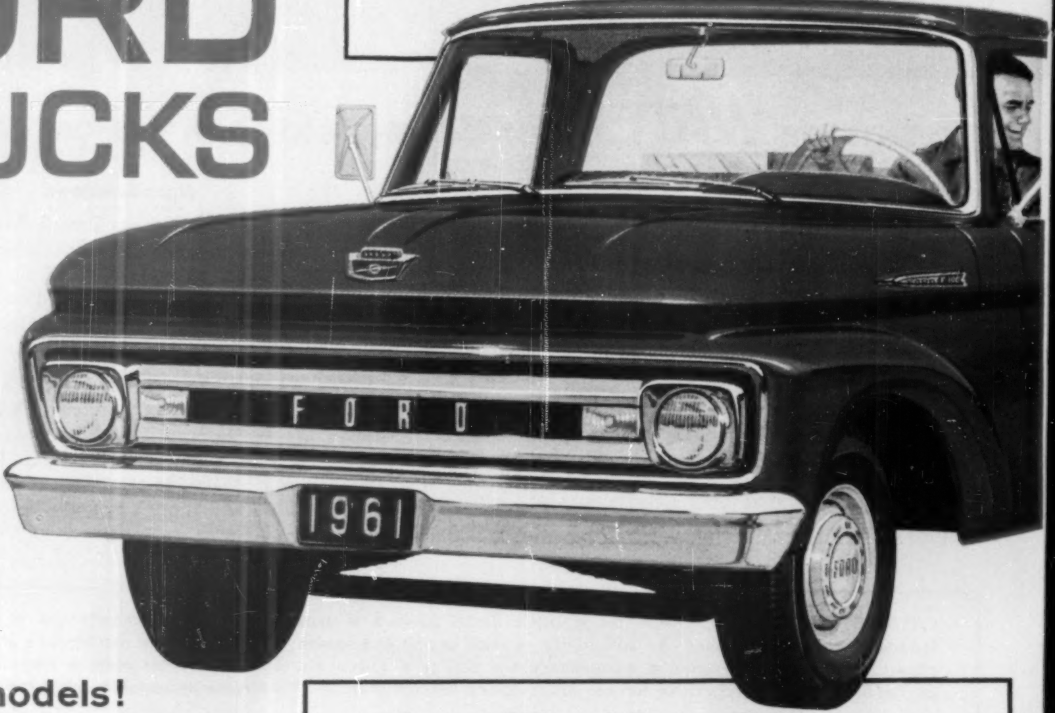
NEW '61 FORD TRUCKS

New Falcon Pickup

Economy never had such style!

Meet the pickup that's priced* as much as $231 less than leading conventional pickups! It delivered over thirty miles per gallon in certified tests! Big six-foot box with low (25.2 in.) loading height! And now—a new 170 high-performance Six plus the 144 Economy Six engine!



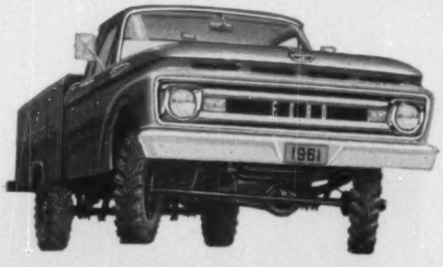


619 new models!

All engineered with one idea in mind . . . economy! New one-piece cab-body design for Styleside Pickups! New "Big Six" power for 2-tonners! New Econoline models that pack bigger loads in three feet less truck length! All at prices that give you a flying start to long-term savings. On all 1961 Ford Trucks, each part, except tires and tubes, is now warranted by your dealer against defects in material and workmanship for 12 months or 12,000 miles, whichever occurs first. The warranty does not apply, of course, to normal maintenance service or to the replacement in normal maintenance of parts such as filters, spark plugs, wiper blades and ignition points.

New 4-Wheel Drive Pickups

Ford's low-priced 4 x 4 models have the getup and traction to go most anywhere . . . road or no road! You can choose from two modern engines—the gas-saving 135-hp Six or the 160-hp V-8 that gives extra power and smoothness with "six-like" economy.



New "Big Six" Engine

More power for America's savingest 2-tonners

Now . . . in a new, big 262-cu. in. Six, Ford gives you the power of big displacement, the durability of heavy-duty construction, plus the gas economy of 6-cylinder design! Available early 1961. New 2-ton toughness, too, with a stronger, heavier frame . . . new riding comfort with new, smoother acting springs . . . and a rugged true-truck front suspension that can give up to twice the tire life of "soft" car-type suspensions!

New Styleside Pickup

Leader in looks, loadspace and low costs!

Ford's 6½- and 8-foot bodies both offer greater loadspace for '61—as much as 16% more! New one-piece cab-body design on a longer wheelbase gives greater strength, new comfort! And look at these savings:

Save up to $157 on price*! Ford Styleside Pickups are priced below all other comparable pickups! Save up to $219 on gas! Ford Sixes beat all leading competitive sixes in certified tests—scored up to 27% more mpg. That figures out to $219 in 50,000 miles! Save up to $150 on tires! In certified tests of truck suspension systems, Ford front tires lasted up to twice as long. In 50,000 miles, that can add up to $150!

FORD TRUCKS COST LESS

YOUR FORD DEALER'S "CERTIFIED ECONOMY BOOK" PROVES IT FOR SURE!

FORD DIVISION, Ford Motor Company

FORD TRUCK CERTIFIED ECONOMY REPORTS

New Econoline

America's lowest-priced* pickup—bar none!

Meet a revolutionary new pickup that saves more ways than any truck you've known! Modern cab-forward design pares away over a thousand pounds of dead weight, yet you get as much payload capacity as standard ½-tonners! It's three feet shorter over-all, yet there's a big 7-ft. box with 73 cubic feet of loadspace! You get lively performance in a proven Falcon Six that delivered up to 40% better gas mileage in certified tests!

**Based on a comparison of latest available manufacturers' suggested retail delivered prices*

MODERN
Concrete

In Appleton's new Riverdale subdivision, all the streets are modern concrete

In Appleton, Wisconsin, they paved with CONCRETE ...the initial cost isn't just a down payment!

With concrete streets, the city isn't forever paying out tax money for upkeep and repairs.

In Appleton, the Riverdale subdivision developer requested paved streets. City officials approved. Property owners voted in favor of concrete. You hear the same story in cities of all sizes. Concrete's the best street investment.

Concrete is the one pavement that enables engineers to design streets to last 50 years and more. There will be no big upkeep expense to burden property owners and taxpayers after just a few years of service.

Modern concrete starts out strong—keeps getting stronger year by year. No pavement could be stronger even if carved from solid rock! Traffic can't push concrete's solid surface into ruts and ripples. Old Man Winter can't rough it up, either, thanks to special built-in protection from freezing and ice-melting salts.

Concrete's grainy surface provides dependable skid resistance. Its light color means high night visibility. For driving comfort, long-time economy, safety you want, modern concrete gets the vote on all counts.

"Concrete's long life and low maintenance will provide the most economical pavement in the long run,"

says **CLARENCE MITCHELL,** ***Mayor of Appleton***

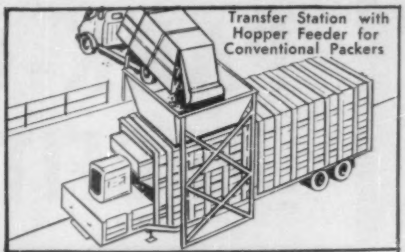
"Maintenance costs are accepted as a city responsibility and anything to reduce those costs will lower annual city expenditures. Indications are that abutting property owners will pay a moderately reasonable premium for high-type street improvements when the city offers to share the cost.

"Concrete streets are nothing new to Appleton. Some of our streets are very nearly a half-century old and they are still serving traffic. We are confident that our new concrete streets will do as well."

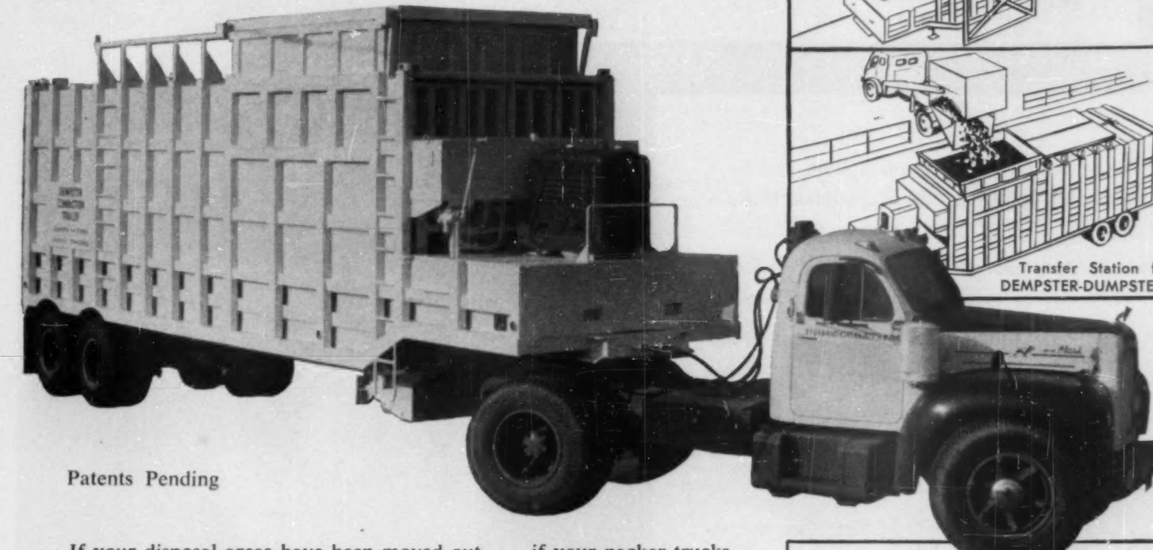
PORTLAND CEMENT ASSOCIATION

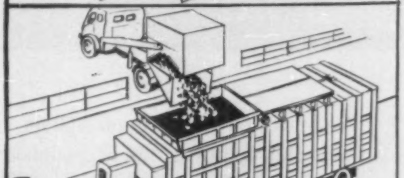
A national organization to improve and extend the uses of concrete

New DEMPSTER Compaction Trailer Hauls Up To 200 yds. of Loose Refuse


Transfer Station with Hopper Feeder for Conventional Packers

Giant Hopper Alone Holds Contents of 16 Cu. Yd. Conventional Packer Truck


Patents Pending

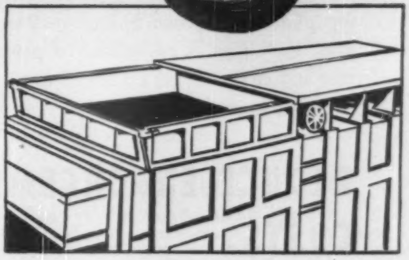

Transfer Station for DEMPSTER-DUMPSTERS

If your disposal areas have been moved out . . . if your packer trucks and DEMPSTER-DUMPSTERS are making longer and longer hauls . . . you can cut your costs to the bone with the new DEMPSTER Compaction Trailer. This portable transfer station can be placed beneath a ramp or bank in a central location. Then your trucks travel only blocks instead of miles. The big hopper itself holds the contents of a 16-yard packer truck.

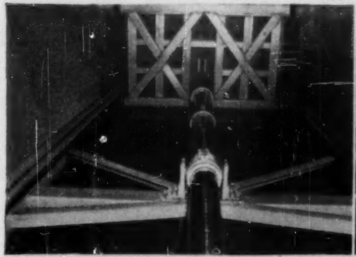
One of the several cities using this new trailer stands to save over $32,000 in the first year of operation of only one unit.

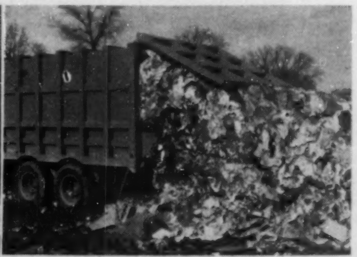
The DEMPSTER Compaction Trailer is all hydraulic, and has its own power plant. Both the 42-yard and 53-yard models deliver 60,000 lbs. hydraulic pressure to the face of the packer plate, enabling users to get (depending on the density of the material) 160 to 200 cu. yds. of loose refuse per trip.

For complete information, send for the free eight-page brochure that describes this new development.


The rolling hopper cover illustrated above increases the capacity of the trailer and prevents refuse scattering.

Dept. AC-12 DEMPSTER BROTHERS, Inc., Knoxville 17, Tenn.


Inside view of trailer showing telescopic packer head cylinder that delivers pressure of 60,000 pounds.


Typical load of refuse being ejected by the packer plate. No tilting of the trailer is necessary.

To: Dempster Brothers, Dept. AC-12
Knoxville 17, Tennessee

Please Send Brochure on New DEMPSTER Compaction Trailer

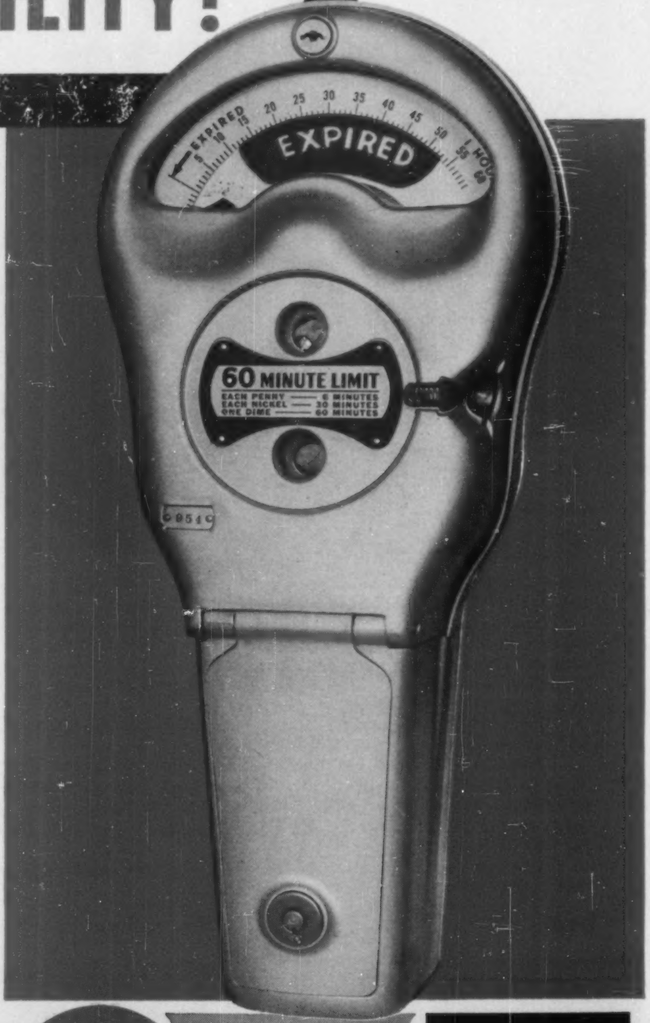
Name____________________ Title__________

Firm______________________________

Address____________________________

City____________________ State__________

GIVE YOUR CITY PARK-O-METER PROFITABILITY!


EXPIRED
5 10 15 20 25 30 35 40 45 50 55 60
EXPIRED
1 HOUR
60 MINUTE LIMIT
EACH PENNY — 6 MINUTES
EACH NICKEL — 30 MINUTES
ONE DIME — 60 MINUTES

Your city's parking meter system can be a profitable operation with Magee-Hale Park-O-Meters.

Park-O-Meters are automatic and accurate. They can be adjusted to meet every need.

Let a Park-O-Meter parking expert call on you to show you how you can have a profitable parking meter system.

LOW MAINTENANCE

. . . costs with Park-O-Meters. No operating parts are exposed to the weather or vandals. Rate ring is adjustable to permit time, rate and coin changes *on the site* . . . no shop overhaul necessary!

REDUCE ENFORCEMENT COSTS

. . . with Park-O-Meters. Large "expired" signal is visible from street by mounted patrolling officer . . . no sidewalk checking necessary.

- Instant, on-site service
- Single coin slot accepting any combination of nickels, dimes, pennies, quarters or tokens
- No exposed working parts

P O M

MAGEE-HALE PARK-O-METER COMPANY
3909 Willow Springs Road • Oklahoma City, Oklahoma

LEADING THE INDUSTRY FOR 25 YEARS

Your City Can Improve Services and Reduce Costs

. . . by taking advantage of the improved municipal equipment offered below.

Streamlined Voting Machine

690 A new voting machine that is said to cost less to buy and operate; saves storage, transportation and time required to program; meets any size or variety of voting requirements; gives trouble-free operation and fool-proof accuracy is being offered by SEISMOGRAPH SERVICE CORP., BOX 1590, TULSA, OKLA. Write for details.

New Portable Power Valve Operator

691 A new portable Pow-R-Drive is a heavy unit, easily handled by one man for opening and closing valves even in tight spots. It also operates hand winches, threads or cuts pipe, drills holes, operates sluice gates or pipe-tapping machines. Write for details to E. H. WACHS CO., 1525 N. DAYTON ST., CHICAGO 22, ILL.

A Free Surveying Manual

692 . . . titled, "1960 Solar Ephemeric and Surveying Instrument Manual" is packed with diagrams, charts, drawings, descriptions of surveying instruments and their use, mathematical and astronomical tables and the principles and practices of celestial observations. It is available by writing DEPT. AC-11, KEUFFEL & ESSER CO., HOBOKEN, N. J.

Pipe Detector

693 All wrapped surfaces including pipe can be quickly and accurately inspected for voids, pinholes, breaks, scratches and burned or coked spots by electronic detectors made by TINKER & RASOR, 417 AGOSTINO RD., P. O. BOX 281, SAN GABRIEL, CALIF. Write for complete details.

New Chip Spreader

694 The new Spread-Master is a chip spreader for road and street construction that will spread from 6" to 13' widths, which pulls loaded trucks with it, hooking and unhooking without stopping. For details, write FLAHERTY MFG., INC., POCATELLO, IDAHO.

Durable Drainage Pipe

695 A corrugated metal drainage pipe with durable asbestos fibers imbedded in the zinc coating and covered with a sealer saturant, gives what is said to be the most durable drainage structure known. Write for descriptive catalog to ARMCO DRAINAGE & METAL PRODUCTS, INC., DEPT. A, 7400 CURTIS ST., MIDDLETOWN, OHIO.

With a Mobile Hydraulic Hammer

696 . . . one man can do the work of ten in cutting asphalt or concrete with minimum back fracture; also in compacting soil, and driving piling or rail posts. The hammer delivers uniform impact blows or may be controlled manually and tilts to deliver blow at the best angle. For details write ARROW MFG. CO., DENVER, COLO.

Coal as a Modern Fuel

697 Today's coal provides more energy for your heating dollar and is clean handling and burning because of technological advances. Learn how your municipality can save heating and power dollars by writing for details from CHESAPEAKE AND OHIO RAILWAY, TERMINAL TOWER, CLEVELAND 1, OHIO.

An Ice Control Bulletin A-441

698 . . . which describes Spread-Mobile Model FS-56 featuring a center-spread design which permits distributing salt or other ice-control material evenly, covering the area in front of all 4 wheels to give better traction, visibility and control. For your copy, write BAUGHMAN MFG. CO., JERSEYVILLE, ILL.

New Reciprocating Incinerator Stoker

699 . . . has been developed by NICHOLS ENGINEERING & RESEARCH CORP., 80 PINE ST., NEW YORK 5, N. Y. to provide a rugged continuous feed to give more complete, uniform burnout of residue in your incinerator through improved air distribution and at reduced construction costs.

New Dry Chemical Feeders

700 Two new volumetric dry chemical feeders are the subject of literature available from PERMUTIT, 53 W. 42ND ST., NEW YORK 36, N. Y. Model DF-78 is a custom installation which does not need specially engineered units; model DF-60 handles chemicals at an exact rate of feed. Write for catalogs.

Circulating Pumps

701 . . . designed to deliver water in large-volume vertical circulating pumps made by BYRON JACKSON PUMPS, INC., P. O. BOX 2017-A, TERMINAL ANNEX, LOS ANGELES 54, CALIF., are being used for cooling tower circulation, feed control, primary water pumping intake where economical reliable service is required. Write for details.

Backhoe, A Production Champ

702 This is a piece of equipment you will want to know more about if you are doing any digging. Write INDUSTRIAL TRACTOR AND EQUIPMENT DEPT., FORD MOTOR CO., BIRMINGHAM, MICH., for information about their equipment that gives more dig-and-load capacity and fuel economy with simple rugged design.

One-Coat Equipment Enamels with Rust Inhibitor

703 Now you can have the rust inhibition of a primer and durability of a finish coat combined in a single coat of enamel to protect your municipal equipment. Write NATIONAL LEAD CO., 111 BROADWAY, NEW YORK 6, N. Y., for information on M50 basic lead silico chromate.

New Cleaning Program for Sewerage and Water Plants

704 A new booklet, "Maintenance Products for . . . Water Treatment and Sewage Plants," describes a program for cleaning such plants with industrial and maintenance products made by DUBOIS CHEMICALS, INC., BROADWAY AT SEVENTH, CINCINNATI 2, OHIO.

For Mowing Cut-up Lawns

705 The Locke Triplex is the most economical mower available because it eliminates all hand trimming giving cutting efficiency and time and energy savings with precision built cutting units according to LOCKE MOWER DIV., LOCKE STEEL CHAIN CO., 1315 CONNECTICUT AVE., BRIDGEPORT 1, CONN.

Pipe Breaks Easily Repaired

706 All that is needed to repair a pipe with a new slip sleeve made by JAMES B. CLOW & SONS, INC., 201-299 N. TALMAN AVE., CHICAGO 80, ILL., is to place the two pieces over the affected spot and tighten four bolts. The gasket, an integral part of the sleeve, gives a tight seal.

Does All Your Tax Work

707 The tax bills of the City of Washington, D. C., are being produced by an IBM Series 50 punched card system. A single punched card gives all the data needed to calculate tax bills, prepare tax rolls and post payment. It's a complete accounting system. For details write IBM DATA PROCESSING DIV., 112 E. POST ROAD, WHITE PLAINS, N. Y.

Han-D-Phone

708 The Kaar Han-D-Phone is a hand-carried radiophone for citizen use as well as industrial use and for police, fire and rescue work. It is 10 x 2⅞ x 2½ inches, weighs 2 pounds and has several miles range. For further details write KAAR ENGINEERING CORP., 2995 MIDDLEFIELD RD., PALO ALTO, CALIF.

Booklet on Instrument for Accurate Angle Measurement

709 Used where extreme accurate angle measurements are required, Precision Theodolite T-3 made by WILD HEERBRUGG INSTRUMENTS, INC., PORT WASHINGTON, N. Y., is one of a complete line of instruments for surveying, photogrammetry and microscopy described in a free booklet. Write for a copy.

Water Supply Lime Slaker

710 Catalog No. 330.100 describes a paste-type lime slaker made by WALLACE & TIERNAN, INC., 25 MAIN ST., BELLEVILLE 9, N. Y. which provides your water plant with complete slaking, producing smaller sized particles for more effective process even when poor grades of quick-lime are used. Write for your copy.

Free Painting Manual For Water-Sewerage Plants

711 . . . is available to city, sanitary and consulting engineers showing the paints best suited for surfaces and equipment under these difficult conditions. For your copy write PERRY-AUSTEN MFG. CO., 250 PARKINSON AVE., STATEN ISLAND 5, N. Y.

Nuclear Sludge Pump Control

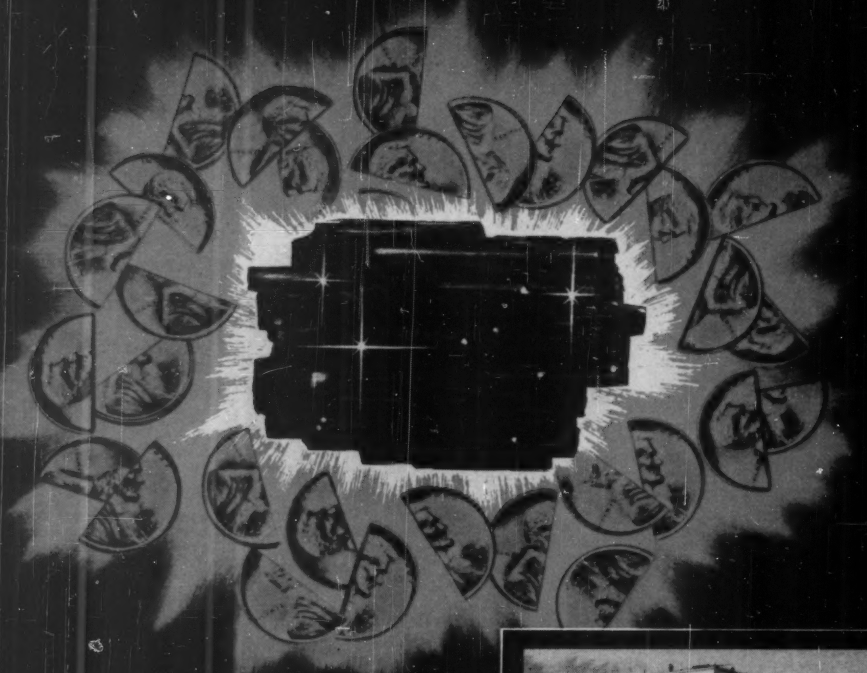
712 . . . which automatically measures the sludge solids in a sewage line activating the sludge pump when solids concentrations go above a predetermined level, thus eliminating any problem associated with maintaining proper sludge consistencies. For complete details write KOMLINE-SANDERSON ENGINEERING CORP., PEAPACK, N. J.

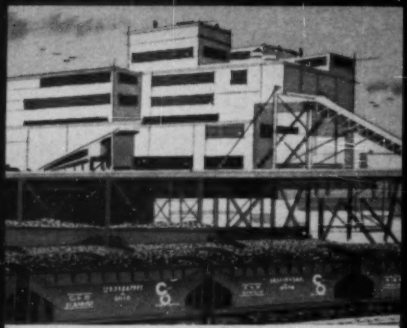
Economical Brush Disposal

713 "Chip Dollars From Your Overhead" is the title of a free booklet which describes how a chipper can reduce brush disposal costs by consolidating the bulk to minimize dumping and manpower needs. For a copy write FITCHBURGH ENGINEERING CORP., DEPT. AC-611, FITCHBURG, MASS.

(See page 45 for more Bulletins)

REDISCOV





Coal operators on the C&O have done a revolutionary job of modernizing, in both mines and preparation plants to economically produce high quality coals. These investments prove coal is the fuel of the future.

ER COAL!

COAL IS VITAL when a firm's survival depends on top efficiency and pared costs

Faced by constantly rising costs, thousands of industrial and commercial plants are exploring every avenue of promising economy in their effort to keep competitive and show a profit.

Many, in their search, have *rediscovered* coal. For today, coal still is the biggest bargain in fuel — more economical, more reliable and convenient than ever before. Highly mechanized mining and preparation methods provide abundant coal of the finest quality, clean and graded for every purpose. Chesapeake and Ohio's huge modern coal-car fleet delivers it dependably, economically. And rich, untapped reserves of bituminous coal stand ready to serve for centuries.

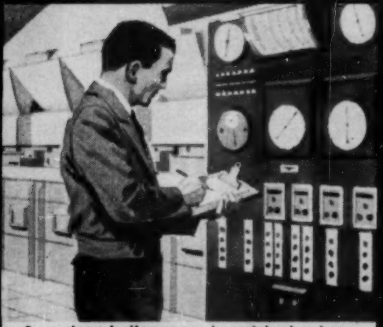
Revolutionary advances in combustion equipment further enhance coal's superiority as a source of heat, power and process steam. New installations or modernization can provide automatic combustion control and complete instrumentation from bin to boiler and beyond.

Coal, for these reasons, remains the wise choice in fuel . . . for industry . . . for small businesses and commercial establishments . . . for institutions. It is the low-cost, high efficiency fuel, and *it's here in abundance!*

Chesapeake and Ohio Railway

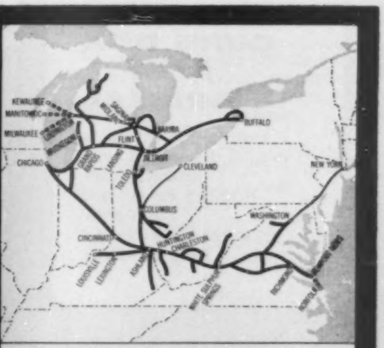
TERMINAL TOWER, CLEVELAND 1, OHIO

Outstandability in Transportation



A modern boiler room in pastel colors has a clean, almost clinical appearance. Automatic sealed handling of coal and ash eliminates dust. Advance-design combustion equipment gets top BTU's from your fuel dollar.

C&O Fuel Service Engineers provide free consultation to C&O patrons on combustion, application, equipment, or plant arrangement problems. Write to R. C. Riedinger, General Coal Traffic Manager, above address.


KEWAUNEE
MANITOWOC
MILWAUKEE
LUDINGTON
MUSKEGON
CHICAGO
GRAND RAPIDS
LANSING
SAGINAW
MIDLAND
FLINT
SARNIA
DETROIT
TOLEDO
BUFFALO
CLEVELAND
NEW YORK
COLUMBUS
WASHINGTON
CINCINNATI
HUNTINGTON
CHARLESTON
LOUISVILLE
LEXINGTON
ASHLAND
WHITE SULPHUR SPRINGS
RICHMOND
NORFOLK
NEWPORT NEWS

The 5100-mile Chessie Route directly serves over 300 mines in America's richest bituminous coal reservoir with the finest fleet of 68,000 coal cars. Specify C&O routing for dependable, efficient delivery.

CHESSIE SERVES THE COAL BIN OF THE WORLD

AFTER 12 YEARS 1959 OF RESEARCH AND 45,000 OPEN-CLOSE TESTS, THE MUELLER® ORISEAL® CURB VALVE HAS GONE TO WORK. AND ON THE JOB, AS IN THE TESTS, THE ORISEAL HAS PROVEN LEAKPROOF IN SPITE OF REPEATED USE OR PROLONGED IDLENESS. THE "TEFLON"* COATED PLUG RETAINS ALL ITS LUBRICATING QUALITIES IN ALL CONDITIONS. EVEN THE 2" ORISEAL VALVE IS OPERATED WITH JUST A 12" WRENCH–UNDER 125 P.S.I. ONCE INSTALLED, THE ORISEAL SELDOM NEEDS ATTENTION–THE LINE WILL PROBABLY BE REPLACED BEFORE THE ORISEAL WILL REQUIRE SERVICING!

WRITE FOR MORE FACTS ON THE ORISEAL CURB VALVE OR ASK YOUR MUELLER REPRESENTATIVE.

NEW CURB BOX *for the* **ORISEAL**

matches the Oriseal in rugged design and long-lasting quality.
H-10385 for ¾" and 1" valves;
H-10386 for 1¼", 1½" and 2" valves.

1
IN
125 WATER
MUELLER
ORISEAL
OUT

ORISEAL CURB VALVE

Sizes ¾", 1", 1¼", 1½", 2"
H-10291—Inside I.P. Thread Inlet and Outlet
H-15176—Mueller Copper Service Pipe Connection Inlet; Inside I.P. Thread Outlet
H-15201—Mueller Copper Service Pipe Connection Inlet and Outlet

MUELLER CO.
DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles
In Canada: Mueller, Limited, Sarnia, Ontario

5575

*DuPont Company registered trademark

FREE catalogs

Write to address given or circle corresponding number on free post card on page 53.

Factory Built Sewage Pumping Stations

714 . . . are clean, easy to maintain and trouble free according to the maker, SMITH & LOVELESS, DIV. UNION TANK CAR CO., DEPT. 10, P. O. BOX 8884, KANSAS CITY 15, MO. They are also economical to install, give dependable operation with minimum maintenance. Write for complete data manual.

Water and Sewage Plant Dry Chemical Feeders

715 For accurate, dependable, continuous weigh feeding of dry chemicals in water and sewage treatment plants send for complete descriptive details from SYNTRON CO., 430 LEXINGTON AVE., HOMER CITY, PA.

Aluminum Lighting Standards

716 . . . attractive, stream-lined and functional in a wide variety of styles to meet your every street lighting need, are made by KERRIGAN IRON WORKS CO., DEPT. A-11, NASHVILLE, TENN. Write for literature.

Water Meters that Maintain Accuracy

717 Since Rockwell introduced the Sealed Register water meter it has attracted wide attention. It maintains its accuracy longer and even at low flows assuring more revenue. It is nonfogging and, because it has fewer parts, maintenance is low. Write for descriptive catalog to ROCKWELL MFG. CO., DEPT. 159L, PITTSBURGH 8, PA.

More Light for Your Streets

718 As traffic gets heavier and streets are widened you need higher level lighting to meet your needs. Boosting illumination intensities may be just a matter of changing lamps. Write for details on OV-50 mercury luminaires to WESTINGHOUSE LIGHTING DIV., EDGEWATER PARK, CLEVELAND, OHIO.

Low-Cost Shower Facilities for Recreation Areas

719 *Bulletin* H-1322 describes all models of Bradley multiperson showers, clearly pointing out that each column has 5 shower heads, requires one set of piping connections yet allows each bather to individually control water volume and temperature. For a copy, write BRADLEY WASHFOUNTAIN CO., 2333 W. MICHIGAN ST., MILWAUKEE 1, WIS.

New Bracket for Outdoor Light

720 A new pole bracket for lighting controls has been presented by PRECISION MULTIPLE CONTROLS, INC., 233 CHESTNUT ST., RIDGEWOOD, N. J. It is for street lighting systems to be adapted for the locking-type lighting controls. Write for details.

Aluminum Traffic Control

721 . . . devices offer these advantages: highly resistant to corrosion; painted or reflective messages last 2 to 4 times longer; will take all message films; are much lighter; are strong; easily fabricated; won't burn. Write for Bulletin 73-10702 to ALUMINUM CO. OF AMERICA, ALCOA BLDG., PITTSBURGH 19, PA.

Powerful Portable Floodlights

722 . . . with a 35-foot tower that telescopes, can be used by municipalities for emergency repair jobs, in police and fire work and for any night time event, are now available in a self-contained unit needing no outside power source. For details write RIG-A-LITE CO., INC., 2102 69 ST., HOUSTON 11, TEX.

Just Right for Sewage Treatment Plants

723 If you're looking for a really rugged chain to match rugged service in your sewage treatment plant, look to literature and information from MOLINE MALLEABLE IRON CO., ST. CHARLES, ILL., specialists in chain manufacturing, to tell you about the features of this long pitch pintle chain and its applications.

Really Tight Sewer Pipe Joints

724 Press-Seal confined compression-type rubber gasket joints remain effectively sealed and watertight even with as much as a 2° pipe deflection. Only unusual deflection can break the seal. For details write PRESS-SEAL GASKET CORP., P. O. BOX 482, RR. 6, COVINGTON RD., FORT WAYNE, IND.

Speedy Mowing to Reduce Hazards

725 For mowing where speed is essential to minimize traffic hazard, such as airport or right-of-way, the S.M.C. Mowal Terrain King may solve your problem. It cuts swaths of 15 feet on rough or even terrain. For information write ENGLER MFG. CORP., P. O. BOX 7616, HOUSTON, TEX.

(See page 48 for more Bulletins)

FREE

New Protection Guide

DETEX PROPERTY PROTECTION MANUAL

DETEX PLANT PROTECTION MANUAL

For industry, institutions, public buildings.

A helpful, up-to-date handbook for anyone responsible for property protection. It's a valuable guide for management; a complete down-to-earth, pocket-size manual for your guards.

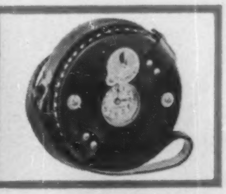
Thirty pages, filled with useful information and protection hints, including such subjects as:

- Who needs a Guard?
- How many Guards do you need?
- Selecting the Guard
- Uniforms, equipment, and appearance
- The Guard's route
- What every Guard should know
- Reporting for duty
- The first round
- Hints on patrolling
- The last round
- Gate Guards
- Why every Guard must be supervised
- Guard's supervisory equipment
- Fire
- First Aid
- First Aid Chart
- Sprinkler Systems
- Report Writing
- Report Forms

Write today on your letterhead for your FREE handbook (2-10 copies, 20c each; 11-50 copies, 15c each; 50 or more copies, 10c each).

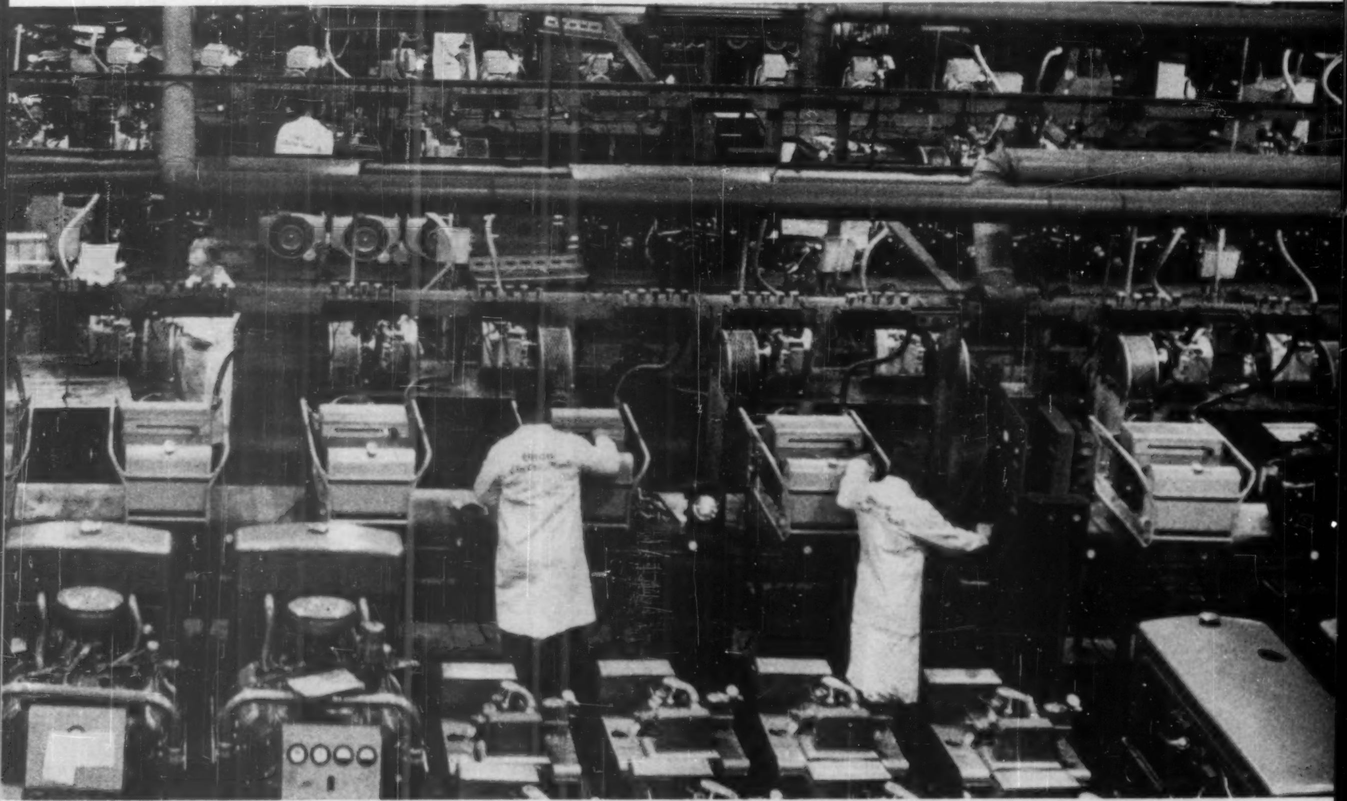
Find Your Nearest DETEX Inspector in The Yellow Pages

DETEX
WATCHCLOCK
CORPORATION
Dept. A-12, 76 Varick Street
New York 13, New York



Before it is shipped every

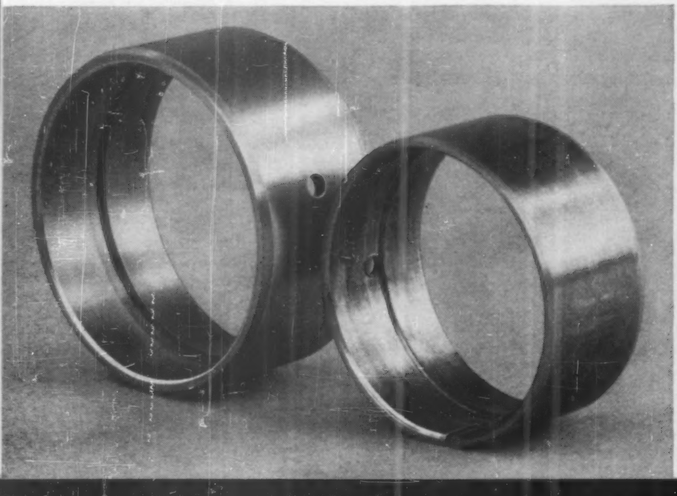
run-in and tested



Part of Onan's testing facilities—largest electric generating plant testing area in the industry!

Big, brawny bearings on Onan engines—twice the bearing area of most competitive bearings. Means longer life between overhauls. Another of many ways that Onan is built *up* to performance, not built down to a price.

Stellite coated exhaust valves and valve seats. One of toughest alloys known. Gives you up to 300% longer valve life than uncoated valves. It's the important details like this that make Onan more economical in the long run.



Onan Electric Plant is for hours

And we mean every Onan Electric Plant! This rugged workout under load means every Onan is ready for hard work the day you get it!

Every Onan plant has a nameplate with horsepower and output ratings. Every single plant is put through a series of tough tests to make sure it does what the nameplate says it will do *before it is crated for shipping.*

But this isn't enough. Inspectors from an independent laboratory pay our factory frequent surprise visits. Their job is to check and double-check—our tested plants as well as our testing equipment and methods. They pull a plant off the line, run it, stop it, gun it, stall it, check and recheck. The end result is Onan's exclusive *Performance Certification* . . . your guarantee of getting the power you paid for.

See the dependable Onan Generating Power Plants soon. You can find an Onan distributor in the Yellow Pages in every major city, or write direct.

ONLY ONAN GIVES YOU THIS CERTIFICATION

PERFORMANCE CERTIFIED

We certify that when properly installed and operated this Onan electric plant will deliver the full power and the voltage and frequency regulation promised by its nameplate and published specifications. This plant has undergone several hours of running-in and testing under realistic load conditions, in accordance with procedures certified by an independent testing laboratory.

D. W. ONAN & SONS INC.
Minneapolis 14, Minnesota

Onan®

World's
Leading Builder
of Electric
Power Plants

D. W. ONAN & SONS INC., 2700 UNIVERSITY AVE. S.E., MINNEAPOLIS 14, MINN.

Winter...

now is the time to properly light your construction hazards

USE THE DIETZ 3 WAY HAZARD WARNING SYSTEM

It's Winter . . . long hours of darkness . . . hazardous road conditions!

Protect the public and you protect yourself. Proper lighting of your hazards may save you thousands in tragedies, bad publicity and lawsuits.

NEW! DIETZ HAZARD WARNING PLANNER

A Practical On-the-Job Tool! Quickly and easily shows how, when, and where to use each type of warning light for maximum safety under all weather conditions and all types of roads and speeds.

Send $1. for each Planner — personalized with your name

LANTERNS TORCHES VISI-FLASH

Use Dietz Visi-Flash Lights to alert the oncoming driver. Brightest, safest, most trouble-free flashers on the market. Warn: "Danger Ahead" for up to 1500 hours without changing batteries.

Use Dietz Lanterns to locate hazard in relation to driver's position. Show exact location, shape, extent, and boundaries of hazard area. Burn up to 100 hours.

Use Dietz Torches to guide driver around the hazard. Fully illuminate the danger in every weather. Burn up to 48 hours on low cost kerosene.

Go DIETZ *and you go Safely*

R. E. DIETZ COMPANY
Dept. 912 Syracuse 1, N. Y.

FREE catalogs

You will find of interest

Write to address given or circle corresponding number on free post card on page 53.

Decorative Screening

726 To "dress up" new or old buildings, for room separation, or screening you will want to know about the new attractive mass produced custom aluminum screening now being offered by IRVING SUBWAY GRATING CO., INC., 5030 27th ST., LONG ISLAND CITY 1, N. Y. They will supply complete details.

Everything for Sewage Testing

727 . . . is described in Bulletin FS-242, from the Fisher unitized sink with its Kemrock top, to a variety of package units designed to fit your testing needs and compiled in a manner to make your ordering easy. For a copy write FISHER SCIENTIFIC, 711 FORBES AVE., PITTSBURGH 19, PA.

Complete Water Service

728 No matter what your needs may be whether for surveys, explorations, wells, pump design, maintenance, chemical or other water treatment, LAYNE & BOWLER, INC., MEMPHIS 8, TENN., is prepared to supply it. For details write for Bulletin 100.

For Maintenance of Concrete Structures

729 Do you have concrete dams, reservoirs, filter plants, sea walls, sewers, stacks or bridges that are a problem to repair or maintain? Then write for literature describing Gunite which may be used for economical, durable and easily applied repair or maintenance of any concrete structure to INDIANA GUNITE & CONSTRUCTION CO., INC., 223 N. ALABAMA ST., INDIANAPOLIS, IND.

Sunken Refuse Receptacles

730 The FORNI METER BOX DIV., CHRISTY CONCRETE PRODUCTS, INC., 1379 62 ST., EMERYVILLE, CAL., shows how to conceal unsightly garbage cans by installing their sunken receptacles. This unit comes in 22 and 30 gallon sizes and is simple to install. Write for details.

Compacts for Economy

731 Lark Fleet drivers report they have, "immediate acceleration," "excellent maneuverability," "good headroom," "directional stability," they "park easily," and are "good for stop-and-go driving." For the full story write. FLEET SALES DIV., AC 11-60 F3, STUDEBAKER-PACKARD CORP., SOUTH BEND 27, IND.

Pumps for Water and Sewage

732 A bulletin describing a new line of vertical single-stage split case centrifugal pumps is available from the AURORA PUMP DIV., N. Y. AIR BRAKE CO., AURORA, ILL. They are said to be ideal where extreme compactness is important.

Bulletin on Centrifugal Pumps

733 . . . is now available from the WATER EQUIPMENT DIV., AMERICAN WELL WORKS, AURORA, ILL. It describes horizontal split case single and double stage centrifugal pumps for use in water treatment plants. For complete information write for Bulletin No. 416.

(See page 52 for more Buletins)

HI-RANGER SPEEDS ALL OVERHEAD UTILITY JOBS

A mobile aerial tower provides greater speed, safety and operating flexibility than does any other known method of performing overhead line and utility maintenance work. In the utility field Hi-Ranger is THE leading tower.

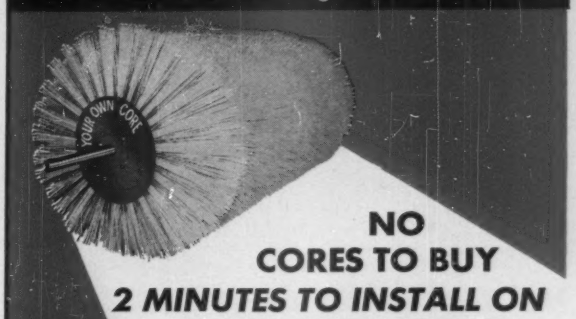
Because the Hi-Ranger is easily operated and handled by a one or two-man crew, you can drastically cut maintenance costs while servicing far greater areas in much less time. The Hi-Ranger makes a "whole team" out of one man. CALL, WIRE or WRITE NOW for complete Hi-Ranger details.

- **All-hydraulic operation and single "3-D" control.**
- **All-hydraulic pruning tool and chain saw. No additional power source required.**
- **Reach ranges from 32 feet, and up.**
- **Fiberglass boom and platform construction; many other features for best insulation and safety.**

HI-RANGER

Mobile Aerial Towers, Inc.
1730 N. Harrison St. Fort Wayne. Ind.

RADAX® PREFABRICATED BROOMS



NO CORES TO BUY
2 MINUTES TO INSTALL ON YOUR OWN CORE
WEARS FOR MONTHS
SWEEPS CLEAN
ASK FOR A DEMONSTRATION

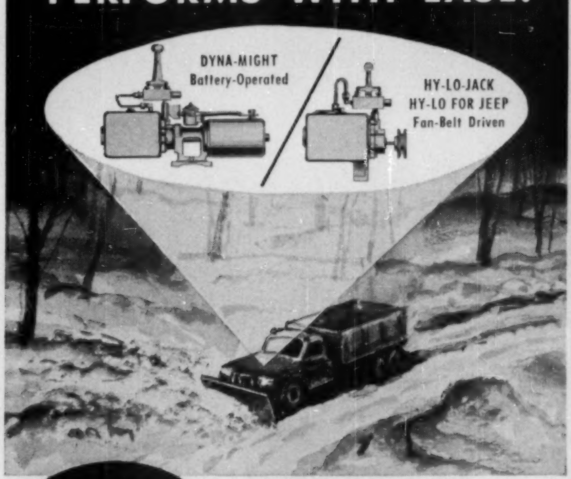
PRICES

DELIVERED TO YOUR SHOP

SWEEPER MAKE and MODEL	SR FILAMENT	TYNEX NYLON
MOBILE 54" BROOM	$195.85	$293.15
MOBILE 58" BROOM	$208.30	$310.60
WAYNE 450, 460, 520 and 550.	$169.75	$252.50
ELGIN STREET KING	$258.20	$388.10
ELGIN WHITE WING	$258.20	$388.10
ELGIN 20, 30, and 81	$270.15	$399.95
AUSTIN-WESTERN 40	$208.15	$303.55
AUSTIN-WESTERN 60	$230.75	$333.20

RYNAL CORPORATION
114 ST. JOSEPH ST., ARCADIA, CALIFORNIA

PERFORMS WITH EASE!

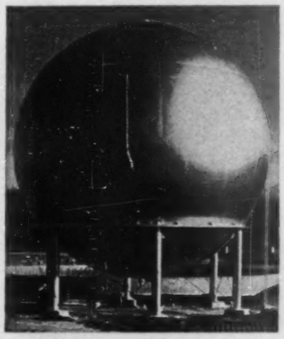


MONARCH

power hydraulic controls lift and lower snow plows automatically!

Be sure your equipment is equipped with Monarch units — makes snow removal jobs faster, easier, more economical. One man controls the plow right from the cab . . . instant up-and-down action with the flick of a wrist. A Monarch control can be quickly installed. See your dealer. *Send for free folder today.*

MONARCH ROAD MACHINERY COMPANY
1331 Michigan St., N.E. Grand Rapids 3, Michigan, U.S.A.



GAS HOLDERS

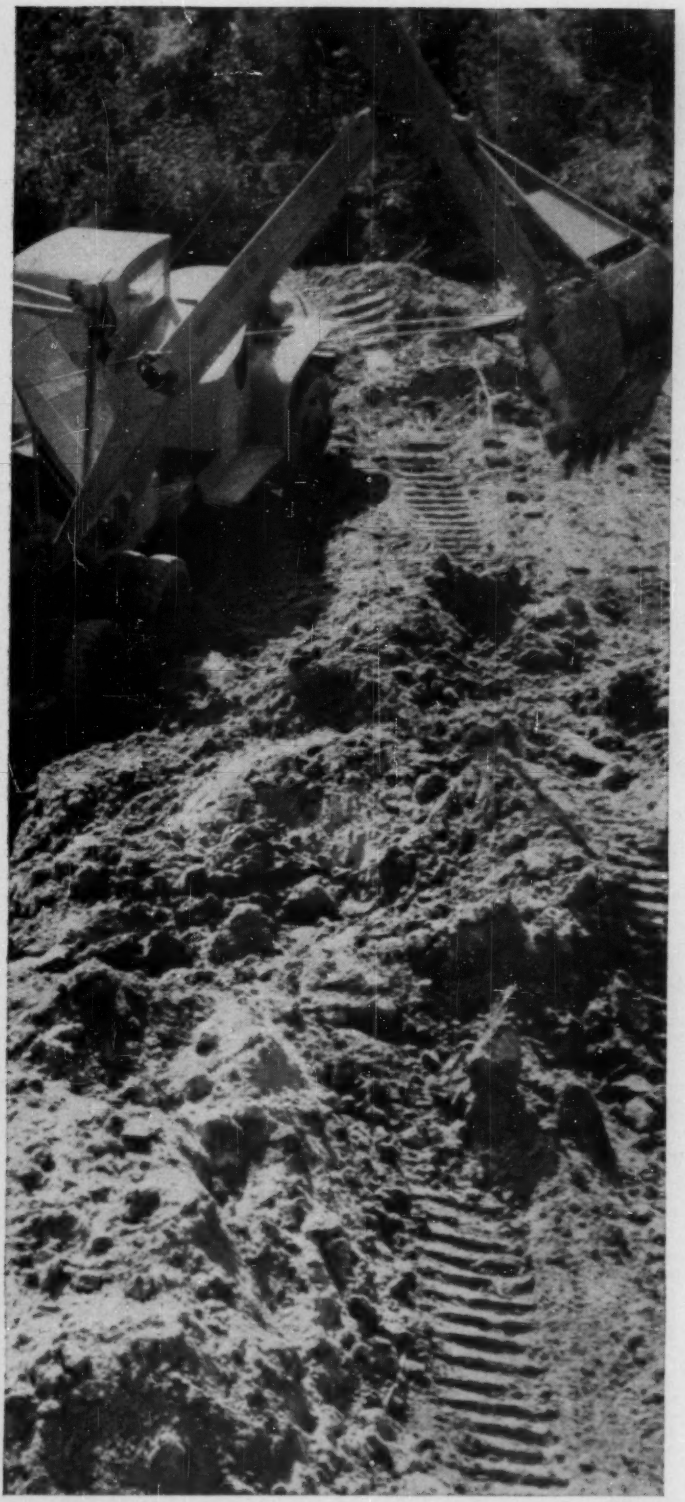
for recovery of sewage gasses

Many municipalities are salvaging sewer gas for fuel, through the use of Cole gas holders similar to the one pictured. Send us your inquiries for tanks of this type—as well as for elevated water storage tanks . . . Take advantage of our 106 years of specialized knowledge and experience in serving America's municipalities and industries and discuss your problems with us. Visitors are always welcome at our plant. Stop by and see us.

Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

Established 1854

R. D. COLE MANUFACTURING CO.
COLE
NEWNAN, GEORGIA



WILL PERFORM FOR A CENTURY WITH A RIVER ON ITS BACK

At left, you see a length of cast iron pipe being installed under the Floyd River in Iowa. This is part of a water feeder main which will reinforce the existing water supply system.

Despite the severe conditions of a river overhead, the inherent ruggedness of cast iron pipe promises at least a century of trouble-free performance, and rarely requires repairs or replacement.

And cast iron pipe's cement lining assures a continued full flow of water year after year. It's no wonder that more than 90% of the pipe used for water supply systems in our 50 largest cities is cast iron pipe!

CAST IRON PIPE RESEARCH ASSOCIATION,
Thos. F. Wolfe, Managing Director,
3440 Prudential Plaza, Chicago 1, Illinois

CAST IRON PIPE

THE MARK OF THE 100-YEAR PIPE

Your City Can Improve Services and Reduce Costs

. . . by taking advantage of the improved municipal equipment offered below.

Free Pipe Locating Booklet

734 "Typical Pipe Detection Problems and Their Solution" is the title of a new free 24-page illustrated, pocket-size book which will be invaluable to pipeline contractors, water companies, municipalities and others who desire to locate underground metal objects. For a free copy write COMPUTER-MEASUREMENTS CO., 12970 BRADLEY AVE., SYLMAR, CALIF.

Portable Air Compressors

735 A line of portable air compressors is described in Bulletin SPB-60 available from SCHRAMM, INC., 603 N. GARFIELD AVE., WEST CHESTER, PA. They are designed for powering all types of pneumatic tools doing a wide variety of municipal jobs. Write for your copy.

Rapid Sand Filter Controls

736 . . . give more efficient use of manpower and water plant facilities, also provide a combination of control functions and stable control of flow rates. They are described in Bulletin 450. Write for your copy to BAILEY METER CO., 1050 IVANHOE RD., CLEVELAND 10, OHIO.

To Conquer Snow and Ice

737 GRAVELY TRACTORS, P. O. BOX 636L, DUNBAR, W. VA., offers four tools to eliminate quickly stoppage caused by ice or snow. They are, 48-inch Snow Plow, 26-inch Snowblower, 48-inch Power Brush and a new Power Spreader designed to quickly give safe, easy passage to pedestrians and vehicles.

Line Marker For Floors, Walls

738 A new paint marker which gives a clean, sharp line on all surfaces indoors and out is announced by CONSOLIDATED PAINT & VARNISH CORP., EAST OHIO BLDG., CLEVELAND 14, OHIO. Called Flor-Line it may be used for marking parking, safety, traffic, or sports fields. Write for details.

New Traffic Counter

739 Traffic may now be counted with an infra-red ray device called Traffitrol Detector which is easily mounted, compact in size, is said to have extreme selectivity, high accuracy and be ideal where traffic makes difficult the use of other type detectors. For details write to HEILAND DIV., MINNEAPOLIS-HONEYWELL, 5200 E. EVANS AVE., DENVER 22, COLO.

Fire Fighting Apparatus

740 For dependable performing equipment for your fire-fighting needs you will want to get details from MACK FIRE APPARATUS, ALLENTOWN, PENNA., on its cab-forward or conventional models—co-ordinated brake, rear ratio and chassis design — Mack-built components to fill your most exacting fire department requirements.

New Car-Dome Warning Lights

741 . . . for police and fire vehicles offer these advantages: 360° visibility over greater distance; lower height, 8¾ inches; frequency beam of from 30 to 120 per minute; one bolt removes lens; contoured to car roof; is rust proof, shock resistant. Write for details to R. E. DIETZ CO., 225 WILKINSON ST., SYRACUSE 1, NEW YORK.

For Municipal Aerial Work

742 To trim trees, maintain street lights or signals, or set light poles cities will find the Elbow made by HOLAN CORP., 4100 W. 150 ST., CLEVELAND, OHIO a device which, truck mounted, puts you where you need to be and safely. Write for complete information.

A New Type of Soil Compactor

743 . . . which operated by one man, delivers ten powerful blows per second to compact an area of 20 square feet per minute. It is especially useful in close areas such as in trenches and next to walls. For complete details write WACKER CORP., HARTFORD, WIS.

Asphalt Planer

744 For information on a one-man operated planer for street, runway or parking area maintenance write MONATCO MFG. CORP., 2214 FRONT, KANSAS CITY, KANS. It is said to give lowest cost per yard with no smoke or fire hazard.

Key Storage System

745 There's a Telkee System to fit every size and type of application for your city according to the free booklet available from P. O. MOORE, INC., GLEN RIDDLE 75, PA. Write for a copy. It will tell how to solve every key problem.

Municipal Floodlighting

746 What do you want in floodlighting? CROUSE HINDS, SYRACUSE, N. Y., promises you easier installation, accurate aiming, easy maintenance, permanent weathertightness, pre-wiring, corrosion resistance and longer life with their floodlights. Write for their floodlighting bulletin.

Nuclear Sludge Pump Control

747 A new technique for accurate, automatic control of sludge density in sewage treatment plants which increases digestion capacity ⅓ and reduces heat requirements without large capital investment is now available. Write for information to OHMART CORP., 2236 BOGEN ST., CINCINNATI 22, OHIO.

New Check Valve Bulletin

748 . . . describes double cushioned check valves which may be used on gases, steam or any fluid and produce no shock or hammer when closing. For your copy write for Bulletin WS-1A to GOLDEN ANDERSON VALVE SPECIALTY CO., 1232 RIDGE AVE., PITTSBURGH 33, PA.

New Street Sweeper Broom

749 With only three simple operations your street sweeper is ready to roll with a new broom. Remove old broom, screw on Radax prefabricated broom and secure the two ends—that's all. Write RYNAL CORP., 114 SAINT JOSEPH ST., ARCADIA, CAILF., for details.

Equipment Catalog

750 A new 64-page equipment catalog is now available covering air compressors; diesel parts; generating plants (AC-DC); hoists; hydraulic control valves, gauges, motors and pumps. For a free copy write to the GROBAN SUPPLY CO., DEPT. 601, 1139 S. WABASH AVE., CHICAGO 5, ILL.

Giant Hauls 60 Yards of Refuse

751 To slash the high cost of transporting refuse to the incinerator PAK-MOR MFG. CO., P. O. BOX 14147, SAN ANTONIO 14, TEXAS has brought out the Giant which will hold over 60 cu. yds. and provides continuous loading and packing through a 100-inch opening. Write for details.

For Municipal Power

752 White engines are doing an impressive job helping keep track of America's missile firings. Learn how these dependable engines can serve your city with rugged, dependable, trouble-free economical service. For details write WHITE DIESEL ENGINE DIV., WHITE MOTOR CO., SPRINGFIELD, OHIO.

Centrifuge Sewage Sludge

753 A unit which separates solids from liquids by centrifugal sedimentation is described in a bulletin available from the BIRD MACHINE CO., SOUTH WALPOLE, MASS. This unit gives rapid separation and is simple, clean, automatic and economical.

Cities Lease Light Trucks

754 To save capital outlay and provide cities with transportation for many municipal jobs, such as water meter reading, fire and health inspection, and light hauling, CUSHMAN MOTORS, 1021 NO. 21ST, LINCOLN, NEBR., has started a program which allows you to lease its new Truksters. Write for literature on the Truckster and the leasing program.

Municipal Supplies Bulletin

755 . . . is a 100-page book listing a very wide selection of signs, signals, traffic devices, police and fire department equipment and other supplies needed by the various departments of every city. For your purchasing convenience write for a copy from SARGENT-SOWELL, INC., P. O. BOX 810, GRAND PRAIRIE, TEX.

Packaged Sewage Pump Station

756 . . . that will give your new split-level suburbs dependable sewerage service at a price that won't seem excessive are offered by TEX-VIT SUPPLY CO., MANUFACTURING DIV., DEPT. M60, P. O. BOX 117, MINERAL WELLS, TEX. These new, precision-engineered pumping stations are protected from corrosion and short circuiting, eliminate surges and prevent odors.

Boltless Flexible Joint Pipe for Gas, Water, Sewage

757 . . . is now available from the UNITED STATES PIPE AND FOUNDRY CO., 3300 FIRST AVE. N., BIRMINGHAM 2, ALA. The only accessories are the gasket and lead lock which speeds installation. The gasket is self-sealing and cannot be displaced when the joint is deflected.

Parking Meter Collection

758 If you want a parking meter collection service that gives you an accurate count, providing a check on revenues on a meter-to-meter, street-to-street basis without expensive audits, you should write PARKING METER DIV., BROADWAY MAINTENANCE CORP., 22-09 BRIDGE PLAZA, LONG ISLAND CITY 1, N. Y., for details.

(See page 56 for more Bulletins)

If desired, use reply post card on page 53 in requesting these catalogs

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BUSINESS REPLY CARD
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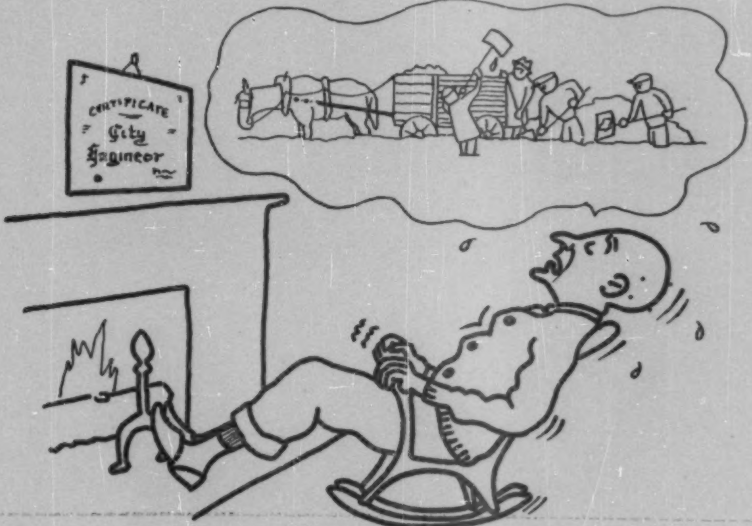
THE AMERICAN CITY MAGAZINE
470 PARK AVENUE SOUTH
NEW YORK 16, N. Y.

Bad Dreams Can Give Way to . . .



If you need information on any type of municipal service or equipment mentioned or advertised in this issue, these reply cards will get action in a hurry.

TO THE AMERICAN CITY's Catalog Supply Department:
Please send literature on items numbered as follows, starting on page 34

667 668 669 670 671 672 673 674 675 676 677 678 679 680 681
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A Listing of Your Business Connection Is important

TO THE AMERICAN CITY's Catalog Supply Department:
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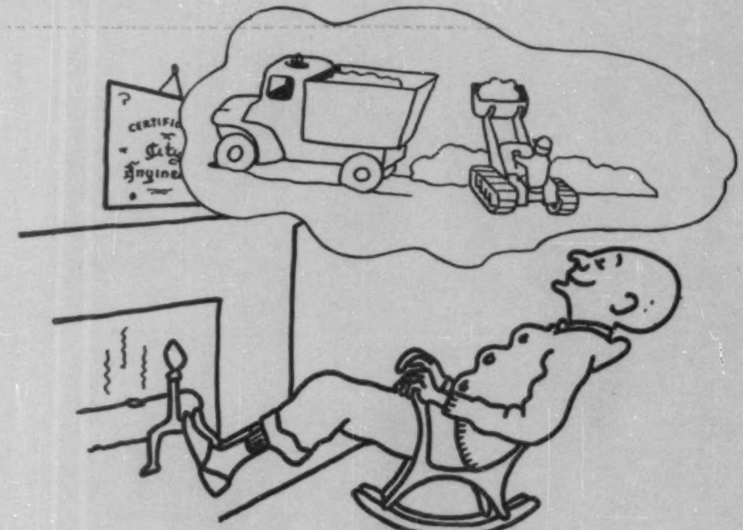
A Listing of Your Business Connection Is Important

Peace of Mind



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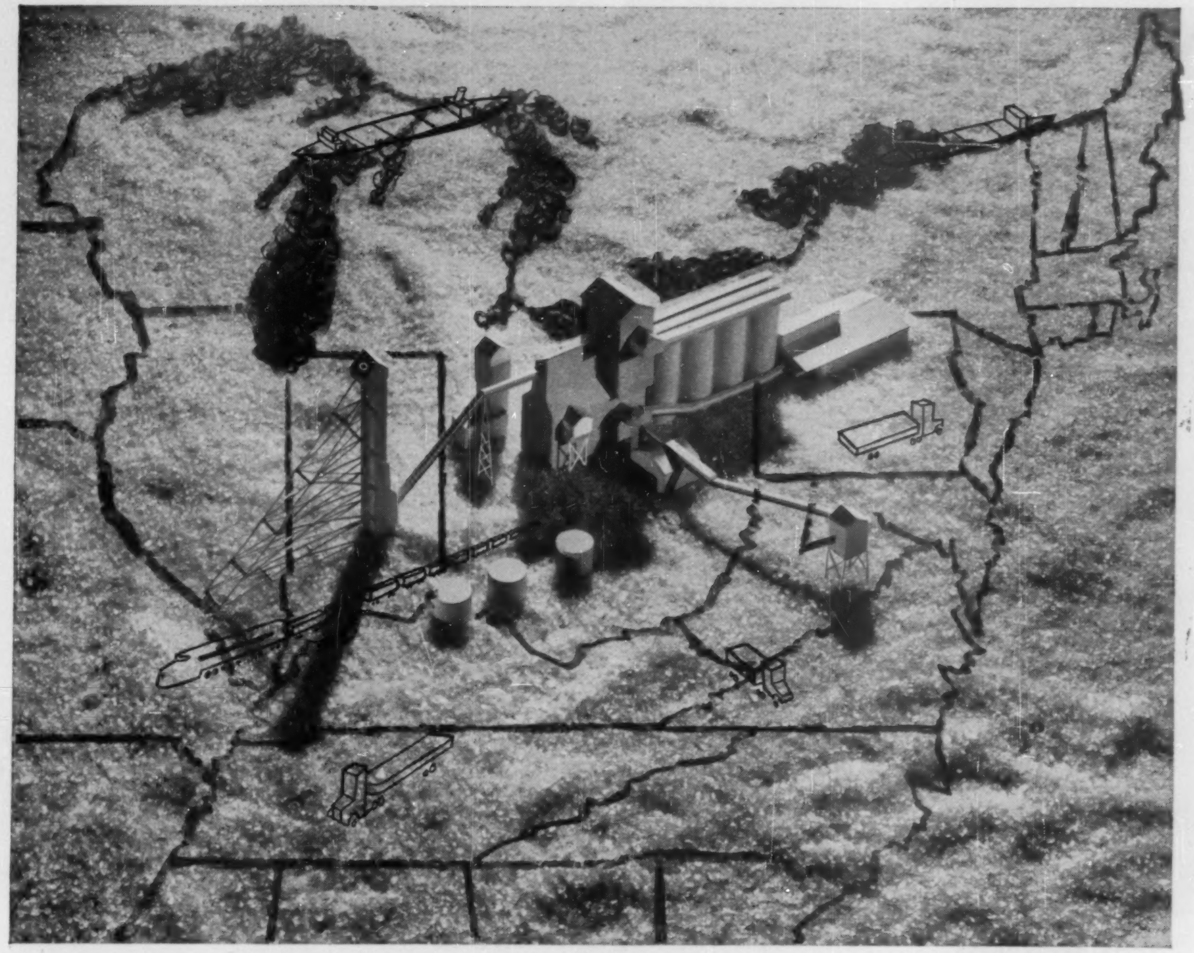
Save time and effort by using these reply cards when you want additional information on any product or service mentioned or advertised in this issue.



A new mine at Fairport, Ohio, is another reason it pays to order Safe-T-Salt* from Morton

Located 29 miles east of Cleveland on Lake Erie, Morton's Fairport Mine offers a convenient source of SAFE-T-SALT (rock salt) for the snow belt cities of the East and Midwest. This new mine can deliver SAFE-T-SALT by boat to all Great Lakes ports and by truck and rail to inland customers.

The new Fairport Mine is but one of several strategically located sources of Morton SAFE-T-SALT, assuring Morton customers prompt, dependable delivery in time for winter.

Be ready all winter—keep plenty of SAFE-T-SALT on hand

Now is the time to check your supply of Morton SAFE-T-SALT for ice and snow removal. You'll want sufficient quantities in stock so you don't get caught short in the event of late snow storms or a prolonged winter like last year. Your Morton representative can advise you on the best way to stockpile Morton SAFE-T-SALT without loss or inconvenience. Any salt remaining at the end of winter can be put to excellent use in summer road stabilization projects.

MAIL COUPON TODAY!

☐ Please send me your new booklet on ice and snow removal.

Name ______________________
(Please Print)

Title ______________________

Company ______________________

Address ______________________

City __________ *Zone* ______ *State* __________

**Safe-T-Salt is a trademark of the Morton Salt Company*

MORTON SALT COMPANY

INDUSTRIAL DIVISION

Dept. AC-12, *110 N. Wacker Drive, Chicago 6, Ill.*

FREE catalogs

You will find of interest

Write to address given or circle corresponding number on free post card on page 53.

One-Man Asphalt Heater

759 . . . is a portable lightweight unit which produces highly concentrated heat to reduce quickly asphalt bumps and push-ups to workable consistency enabling a crew to step up production. For details and specifications write ESSICK MFG., 1950 S. SANTA FE AVE., LOS ANGELES 21, CALIF.

Backhoe Attachments Bulletin

760 SCHIELD BANTAM CO., WAVERLY, IOWA, has just released a new bulletin covering all its backhoe attachments and options for its crawler-mounted, carrier-mounted and self-propelled crane-excavators. Write for Bulletin #BH-60-1.

Economical Incineration

761 The DRAVO CORP., PITTSBURGH 22, PA., is offering what it terms, a smokeless, odorless, economical incinerator which brings cost into line with most community budgets by reducing the number of operators and using latest materials handling and combustion techniques. Write for details.

Spiragester Bulletin

762 Anyone interested in the design or operation of sewage treatment plants will want to write for Bulletin #136 which gives complete design and operating data on the Spirogester which in small plants combines both settling tank and digester in a single efficient two-story tank. For details write LAKESIDE ENGINEERING CORP., 222 W. ADAMS ST., CHICAGO 6, ILL.

Cities Can Lease Waste Receptacles

763 Superior Litter Control Program is the name of a service offered by JOHN WOOD CO., 509 FRONT AVE., ST. PAUL 17, MINN., whereby you receive technical advice on your litter control needs and can lease their rust-free, long-wearing, weather-proof waste receptacles. Write for full details.

New Infra-red Heaters

764 Electric infra-red heaters which transfer radiant energy directly to the object without costly heating of intervening air are available for use in hard-to-heat municipal buildings or out-of-door spots. For details on this unique heating device write FOSTORIA CORP., 1200 N. MAIN ST., DEPT. 86K, FOSTORIA, OHIO.

New Aeration for Sewage Plant

765 The Inka Aeration system, said to be the "first different approach to activated sludge aeration in — 30 years" gives high turbulence to greatly increase oxygen absorption for more effective activated sludge treatment. Write for descriptive Bulletin No. 7317 to DORR-OLIVER INC., STAMFORD, CONN.

Small Sewerage Plant

766 To safeguard the health of small developments outside the municipal sewerage system LINK-BELT CO., PRUDENTIAL PLAZA, CHICAGO 1, ILL., is offering a Bio-Pac fully automatic, two-stage bio-filtration sewage treatment system that gives a high degree of treatment with minimum operating and maintenance costs.

Soil Shredder for City Parks

767 . . . will give you the finest prepared soil, peat, manure, compost, or sludge or combination of these elements. The unit, Model L-60, has a hopper capacity of over 1 cu. yd. Write for descriptive literature to LINDIG MFG. CO., INC., 1875 WEST COUNTY RD., ST. PAUL 13, MINN.

Versatile Mower-Tractor

768 If your municipality is going to need a mower you will want to write TOPEKA HIWAY MOWER INC., P. O. BOX 720, TOPEKA, KANS., for details of its "Forty Mile Mower" which not only mows well but may be equipped as a sweeper, dozer, loader or power sprayer.

Safe, Sure Hydrant Operation

769 . . . is promised by DARLING VALVE & MFG. CO., WILLIAMSPORT 10, PA., with its line of hydrants which are designed to give complete water drainage to prevent freeze-ups, corrosion and binding, plus other advantages. For all the details ask for Bulletin 5710.

Property Protection Manual

770 . . . which will help you provide adequate protection for your municipal properties, and a pocked sized guide for your guards is now available free if you will write for it on your letterhead to DETEX WATCHCLOCK CORP., DEPT. A-12, 76 VARICK ST., NEW YORK 13, N. Y.

Flocculation Equipment For Water and Sewage Plants

771 A bulletin answering the questions water or sewage treatment men would ask about the Walking Beam flocculating equipment manufactured by the STUART CORP., BALTIMORE, MD., is available by writing for it. It shows its construction, application and advantages.

New Two-Way Communication

772 . . . is now available for police or fire work which has an extra small transmitting and receiving unit with qualities formerly available only in larger units. It is fully transistorized and self contained except for microphone. For details write MORROW RADIO MFG. CO., SALEM, OREGON.

Meter Setting in Tight Spots

773 A new copper yoke now lets you set a water meter where piping is too tight for a regular yoke. Easily installed, it provides rigid support for piping and protects meters from stress. For details write MUELLER CO., DECATUR, ILL.

For Sure Mosquito Control

774 . . . you will want complete information on heat-stable Lethane 384 which is said to be the most effective knock-down and killing agent for eliminating mosquitos when used as recommended in fogging concentrates and adulticiding sprays. For details write SANITARY CHEMICALS DEPT., ROHM & HAAS CO., WASHINGTON SQ., PHILADELPHIA 5, PA.

Street Sweeping Brush

775 The Unisweep is made for all sweeping machines and consists of a steel core and convoluted brush sections which eliminate the need for metal spacers giving more space for brush fill with less weight on the machine. Write ROADMASTER BRUSH CORP., UNION, N. J., for details.

Salt for that Snow and Ice

776 For a convenient source of rock salt for snow and ice-control, cities in the east and midwest will find that the Morton mine located near Cleveland will assure prompt, dependable delivery in winter time. For information write MORTON SALT CO., DEPT. AC-11, 110 N. WACKER DR., CHICAGO 6, ILL.

Tractors for Utility

777 J. I. CASE CO., DEPT. M156C, RACINE, WIS. points out that "for small and medium size tractor jobs, you can own two Case 530 Utility machines at the cost of one larger outfit." They give high dig-power, extra traction, reverse direction instantly, back up 24% faster than forward, turn sharply, travel up to 18 mph.

Water Pipe for Endurance

778 With the flexible design of American Concrete Cylinder pipe, you can obtain a water piping system economical in ultimate cost and enduring in reliable performance according to AMERICAN PIPE AND CONSTRUCTION CO., P. O. BOX 3428, TERMINAL ANNEX, LOS ANGELES 54, CALIF. Write for details.

Pickup Trucks for City Needs

779 A complete new line of pickup trucks designed for economy which feature a 4-wheel drive model to go most any place; the Econoline, lowest priced pickup made, and others to meet your city's maintenance and construction needs are offered by FORD DIV., FORD MOTOR CO., DEARBORN, MICH. Write for "Certified Economy Book."

Streamlined Luminaires for Street Lighting

780 For a built-in-ballast mercury luminaire that combines night time efficiency with day time beauty, lightest weight, most compact design, and streamlining for low wind resistance write for complete details to JOSLYN MFG. AND SUPPLY CO., 155 N. WACKER DR., CHICAGO 6, ILL.

Fire Alarms for Cities

781 A fire-alarm system which will provide cities with not only fire alarm, but will also provide other disaster type signals as well as voice notice is made possible because it uses a transistorized Penetrator. Write FYR-FYTER CO., 221 CRANE ST., DAYTON 2, OHIO, for details.

New Police Pursuit Cars

782 Dodge is offering a line of rugged police pursuits with solid, rattle-proof construction, seven-dip rust-proofing, torsion-aire suspension, total-contact brakes and economical operation. Write for catalog to DODGE DIV., CHRYSLER CORP., BOX 1259-D, DETROIT, MICH.

Topping for Walks

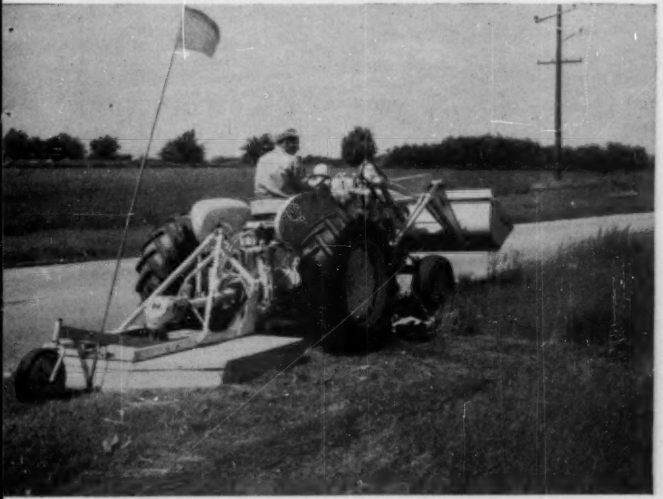
783 To smooth, seal, and beautify walks, drives, parking areas and playgrounds, municipalities will be interested in literature describing Walk-Top available from AMERICAN BITUMULS & ASPHALT CO., 320 MARKET STREET, SAN FRANCISCO 20, CALIF.

Equipment for 1001 Jobs

784 The Gradall is a piece of equipment for a multitude of city jobs, it will clean up after storms, dig trenches for drainage or water or sewer lines, or deep excavations, or remove snow and ice to name a few. For details write to WARNER & SWASEY CO., CONSTRUCTION EQUIPMENT DIV., 5701 CARNEGIE AVE., CLEVELAND 3, OHIO.

(See page 59 for more Bulletins)

Quiet, vibration-free mowing at higher speeds is yours with the new International balanced head cutter bar mower.



Cut a 10-foot swath with combination of International rotary and cutter bar mowers. Use together or independently.

Only a Cub tractor can do so much for such a small investment! Above, equipped with 60-inch International Danco rotary.

More mowing for your money

at your IH® tractor dealer

From grooming neighborhood playgrounds to mowing miles of expressway median, today's public officials are faced with a complexity of mowing problems. Selecting the right equipment to meet these varied requirements can help stay within manpower and equipment budgets on the one hand, and favorably influence public opinion on the other through improved community appearance.

You can save hundreds of dollars, for example, if you specify an International® Cub instead of a larger tractor that can do no more on a multitude of small-area mowing jobs. At the other extreme, you cut high-mileage mowing costs to the bone when you use a 61 hp* IH tractor with 94-inch, center-mounted rotary mower. Where fuel costs are important, specify 38, 47, and 61 horsepower Internationals with Diesel engine.

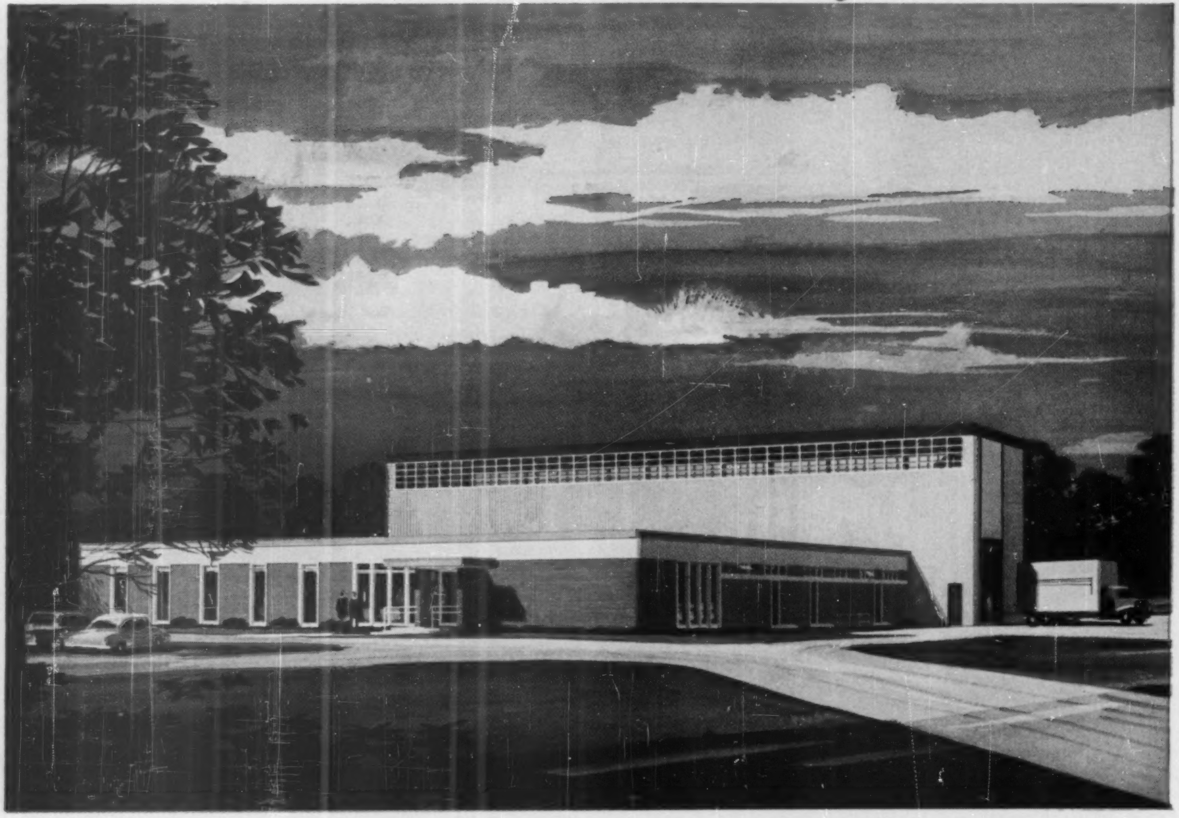
**Maximum engine hp at standard conditions*

Ask your IH Dealer—He'll gladly supply complete specifications covering the industry's widest range of tractor horsepower ratings, with matching cutter bar, rotary, and other types of mowers. See for yourself why you get the most for the money with Internationals!

PARTS and SERVICE EVERYWHERE
IH
● IH Parts Depots
• Dot represents 10 dealers
5,000 dealers backed by 12 parts depots

INTERNATIONAL HARVESTER

LOCK JOINT PIPE COMPANY *Proudly Presents*



ITS *New*, LARGER AND IMPROVED

RESEARCH AND DEVELOPMENT CENTER

Although Lock Joint Pipe Company has maintained its own research and testing laboratory for many years, the Company's growth and insistence on even higher quality products and improved manufacturing techniques have demanded the expansion of these facilities. For this reason it has erected a new research center featuring the latest equipment and staffed with scientists, engineers and trained technicians.

The members of the Research and Development Division, housed in this new half-million dollar center, stand guardian over the high quality of all present Lock Joint products and institute and evaluate future product developments. For it is the Company's firm conviction that only by strict quality control can its products' superiority be maintained . . . and that only through the development of even better materials and more efficient manufacturing techniques can Lock Joint retain its position at the head of its field.

LOCK JOINT
MADE ITS WAY BY THE WAY ITS MADE
CONCRETE PIPE

LOCK JOINT PIPE CO.
East Orange, New Jersey

Sales Offices: Chicago, Ill. • Columbia, S.C. • Denver, Col. • Detroit, Mich. • Hartford, Conn. • Kansas City, Kan. • Perryman, Md. • St. Paul, Minn. • Winter Park, Fla.
Pressure • Water • Sewer • REINFORCED CONCRETE PIPE • Culvert • Subaqueous

CATALOGS *for Improved Municipal Services*

Write to address given or circle corresponding number on free post card on page 53.

Luminaire for Street Lighting

785 You can bring the beauty of modern lighting to the streets where taxpayers live with the new M-250 R luminaire which aims light on streets and sidewalks and away from bedroom windows giving three times the light six times longer than a filament lamp. For details write GENERAL ELECTRIC CO., SECTION 460-10A, SCHENECTADY, N. Y.

Flow Meter for Water, Sewage

786 For a superior flow meter that has no flow restrictions, no taps to get plugged or frozen, no seals or purges, no moving parts, you will want to get details on the magnetic flow meter made by FOXBORO CO., 9512 NEPONSET AVE., FOXBORO, MASS. Write for Bulletin 20-14.

Multi-Duty Tractors For Municipalities

787 For a tractor-mounted multi-duty digger that can be used for street construction and maintenance, trenching for water or sewer lines, that will prove helpful in your parks and for other construction work write for details to the ALLIED EQUIPMENT DEPT., FORD MOTOR CO., 2500 E. MAPLE RD., BIRMINGHAM, MICH.

Traffic Signal Sequence

788 . . . may be arranged by a control device that varies "green time" by three factors: by the *time* vehicles have been waiting at opposing red; by the *number* of vehicles waiting; and by the *density* of vehicles moving on green. Write for details on ET150 controller to EAGLE SIGNAL CO., MUNICIPAL DIV., DEPT. AC 1260, MOLINE, ILL.

Tractor Loaders that Last

789 By a 5-way filtering (air filtered twice and oil filtered three times) on tractor loaders, ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIV., MILWAUKEE 1, WIS., is bringing peak hydraulic operating efficiency and extended life service to its equipment.

A New Program Timer

790 . . . for scheduling work periods or for programming processes such as often needed in sewage treatment, is now being offered by LATHEM TIME RECORDER CO., 76 THIRD ST., N. W., ATLANTA 8, GA. It may also be used for coded signals, fire alarms and is low in cost. Write for complete data.

Catalog on Pipe Couplings

791 . . . designed especially for cast iron or asbestos-cement pipe and include straight, transition, reducing, insulating, and 'cut-in' repair couplings among other such products is now available from SMITH-BLAIR, INC., 535 RAILROAD AVE., SOUTH SAN FRANCISCO, CALIF. Write for your copy.

Booklet on Parking Lot Layout

792 Parking plans to fit virtually any size or shape of lot and barriers designed for any type surface for parking without damage to vehicle or property are discussed in Bulletin 14A offered by HARRIS-BARRIER, INC., 2140 Montcalm Ave., INDIANAPOLIS, IND.

Microstraining for Water Plants

793 A bulletin is now available describing the 120-mgd Glenfield & Kennedy microstraining installation at Marston Lake, Denver, Colo. This process is a highly effective means of straining out large and small particles and even such substances as algae from raw water. Write for a copy to GLENFIELD & KENNEDY, INC., 275 HALSTEAD AVE., HARRISON, N. Y.

Sewer Pipe Catalog

794 A new 40-page catalog, Form E-360-53, describes vitrified clay pipe of standard, extra strength, perforated or double-length; Wedge-Lock with plastisol double-ball joint, and type "O" fittings and allied products. Copies are available from EVANS PIPE CO., UHRICHSVILLE, OHIO.

Boring Tool for Pipe Laying

795 For an earth boring tool that will bore as far as 250 feet, eliminating trenching and materially reducing costs of pipe installation write for a free booklet from HYDRAUGER CORP., 681 MARKET ST., SAN FRANCISCO 5, CALIF.

Low-Cost Two-Way Radio Communications

796 The 4-channel Commaire ED-27M citizen band radio saves man-hours, enables operations to be directed from the field, maintains contact between supervisor and men. VOCALINE COMPANY OF AMERICA, 131 COULTER ST., OLD SAYBROOK, CONN., reports that it operates effectively over a 15-mile radius, has transistorized power supply, 5-watt input, 3-watt output.

(See page 60 for more Bulletins)

Breaking all records on nationwide demonstration tour — See it in your area
SeweRodeR

SeweRodeR cleans far more sewer per man . . . per day . . . per dollar!

Public officials concerned with greater efficiency and upgrading working conditions in the Sewer Department will want to see a SeweRodeR demonstration when the team comes to their area. They'll see how one operator can rod from manhole to manhole non-stop, reaming out sludge and obstructions and restoring free flow in a matter of minutes. They'll see "case histories" showing the SeweRodeR can save up to $264 per mile in cleaning costs, and pay for itself in six months!

They'll like these exclusive advantages: positive chain and dog non-slip rod drive; audible safety clutch to protect tools, pipe and machine; push-pull power from 4 to 4,000 lbs., instantly reversible; ability to work water-filled manholes; and many more.

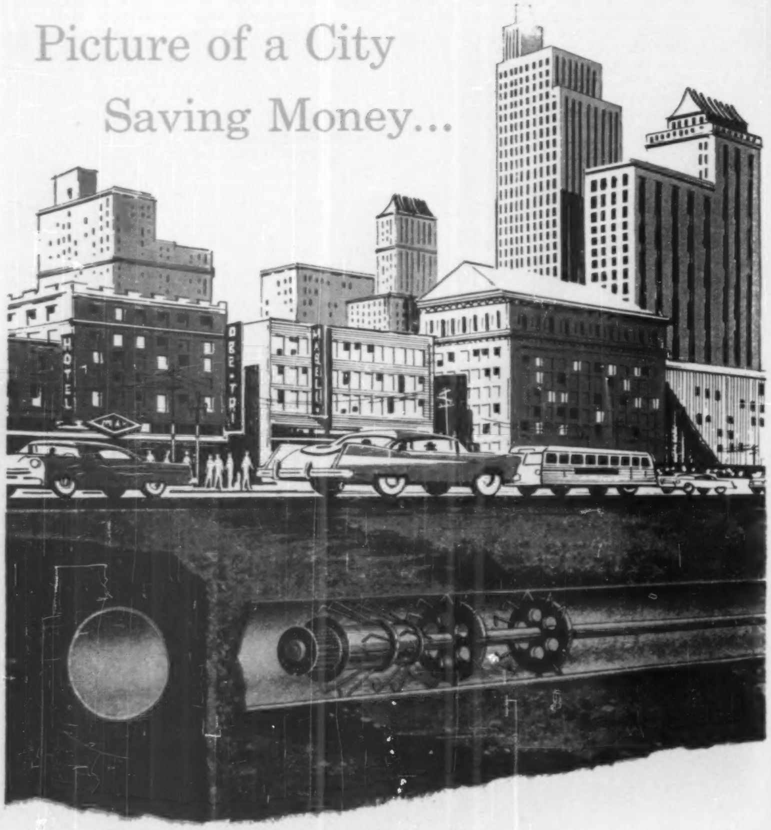
FLEXIBLE INC.

415 So. Zangs Blvd., Dallas, Texas
3787 Durango Ave., Los Angeles 34, Calif.
1005 Spencerville Road, Lima, Ohio

HOW YOU CAN SEE **SeweRodeR** IN ACTION

Write for date of demonstration in your area. We are making arrangements in many cities and will notify you well in advance. Be prepared to compare your present sewer cleaning methods and costs with SeweRodeR. You may discover an entirely new approach to saving important budget money!

Picture of a City
Saving Money...



Spunline Relines Pipe Lines in-place without removing the pipe

Another city such as Spokane, Dallas, or Los Angeles will soon be enjoying the savings of another rehabilitated pipe line. The flow will increase, the pumping cost will drop and the pipe line will be good as new for at least another quarter of a century.

And traffic will move without interruption or inconvenience to the public.

Spunline® is applicable to pipe lines down to 4″ and may be used in cast iron, steel, concrete and wrought iron pipe lines.

Write, wire or phone PIPE LININGS Inc.

Subsidiary of American Pipe and Construction Co.

2414 East 223rd Street, Wilmington, California
P.O. Box 457 • Phones: SPruce 5-3273 — TErminal 5-8201
Rail Address, Pacific Electric, Watson, California

MONEY SAVING *catalogs*

Write to address given or circle corresponding number on free post card on page 53.

Profitable Parking

797 Your city's parking meter system can be profitable with reduced enforcement costs and low maintenance using automatic, accurate meters that can be adjusted to meet every need according to MAGEE-HALE PARK-O-METER CO., 3909 WILLOW SPRING RD., OKLAHOMA CITY, OKLA. Write for brochure.

New Crawler Tractor

798 A new four-cylinder crawler, giving wide-range performance, operates efficiently through the full throttle range. A single lever controls all movements of loader lift arms and self-leveling bucket. For details write JOHN DEERE, 3400 RIVER DR., MOLINE, ILL.

Equipment for Water and Sewerage Treatment

799 *Bulletin* 1010 describes digester floating covers, sludge heaters, recirculating systems, package treatment plants, clarifiers, rotary distributors, pneumatic ejectors, plunger sludge pumps and flocculation equipment and is available by writing RALPH B. CARTER CO., HACKENSACK, N. J.

Delivery Truck Bodies

800 . . . ideally suited to the needs of fire, police, water and municipal maintenance are made by BOYERTOWN AUTO BODY WORKS, INC., BOYERTOWN, PA. Built of high strength alloy steel they give lighter weight, corrosion resistance, longer service and utilize full load space.

Pipe with Lower Handling Cost

801 If you want quality pipe that will arrive palletized for quick, easy unloading, storing, or transporting to the job, write GRIFFIN PIPE DIV., GRIFFIN WHEEL CO., COUNCIL BLUFFS, IOWA, for information on their unique system of palletizing and their pipe which is more economical to install because of 20-foot lengths.

Quality Water Meters

802 When you buy Trident water meters, you are getting long years of trouble-free service with precision accuracy at low maintenance cost. Moreover, you keep in step with progress since Trident's interchangeable design enables you to keep your meters modern. Write for details to NEPTUNE METER CO., LIQUID METER DIV., 47-25 34TH ST., LONG ISLAND CITY 1, N. Y.

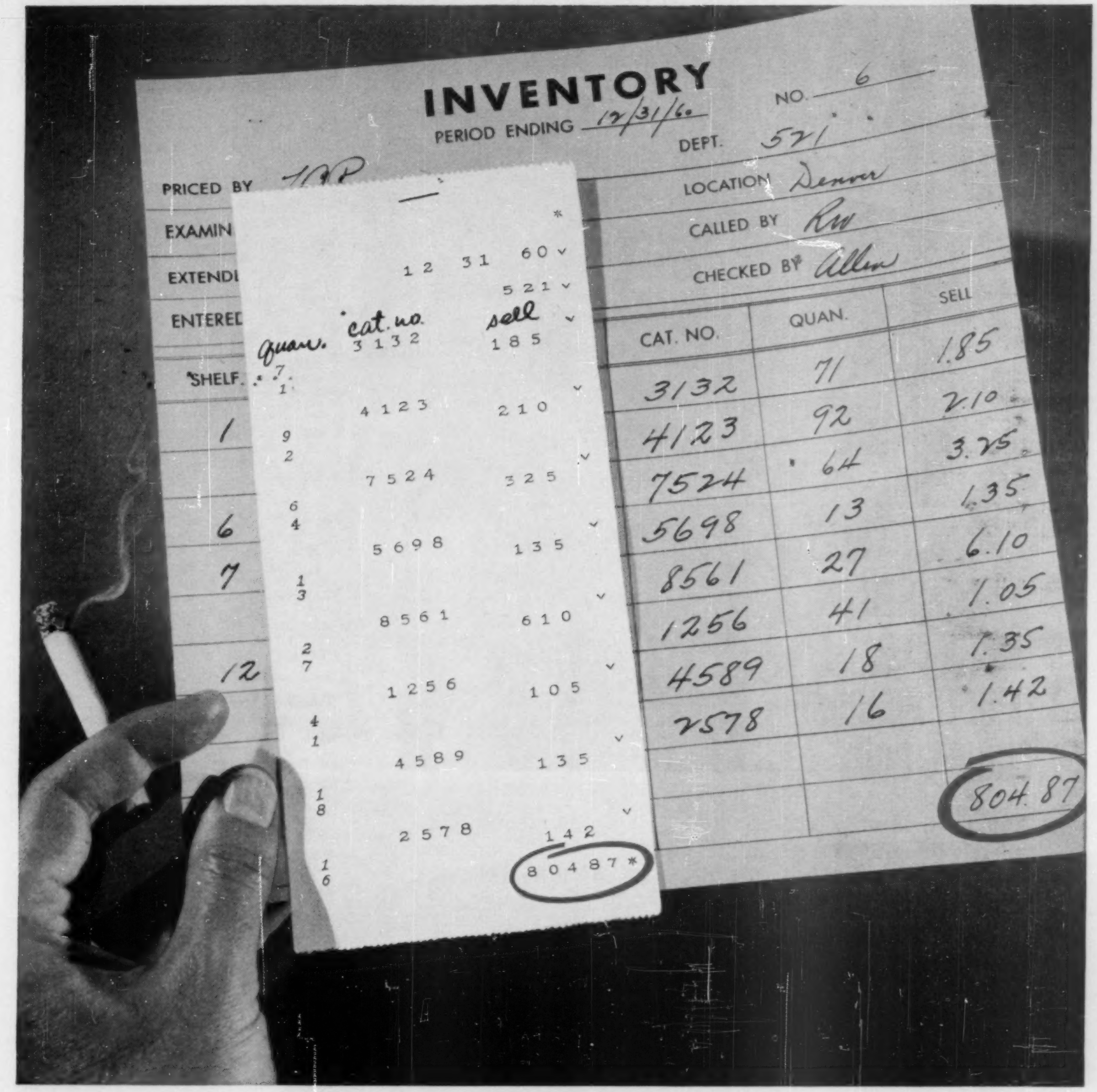
Automatic Sign Making Set-up

803 For volume production of quality signs at low cost that Automatic Sign Shop of WALD INDUSTRIES, INC., HUNTINGDON, PA., does the job. Two men easily operate the tandem conveyor set-up turning out signs finished with PRISMO "200" a highly dependable reflectorized finish.

Pipe Inspection by TV

804 . . . quickly enables you to locate and pinpoint trouble spots in your sewers, and other pipelines, giving you a visual picture of the actual conditions and a permanent record. For details write INSPECTOLINE INC., 9501 EUCLID AVE., CLEVELAND 6, OHIO.

(See page 62 for more Bulletins)



INVENTORY

NO. 6

PERIOD ENDING 12/31/60

DEPT. 521

PRICED BY

EXAMIN

LOCATION Denver

EXTENDI

CALLED BY RW

ENTERED

CHECKED BY Allen

SHELF	CAT. NO.	QUAN.	SELL
1	3132	71	1.85
	4123	92	2.10
6	7524	64	3.25
7	5698	13	1.35
	8561	27	6.10
12	1256	41	1.05
	4589	18	1.35
	2578	16	1.42
			804.87

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                        *
        12  31      60 v
                   521 v
quan.  cat.no.    sell v
 7      3132       185
 1                     v
        4123       210
 9
 2                     v
        7524       325
 6
 4                     v
        5698       135
 1
 3                     v
        8561       610
 2
 7                     v
        1256       105
 4
 1                     v
        4589       135
 1
 8                     v
        2578       142
 1
 6                  80487 *
```

Tape on an Inventory!

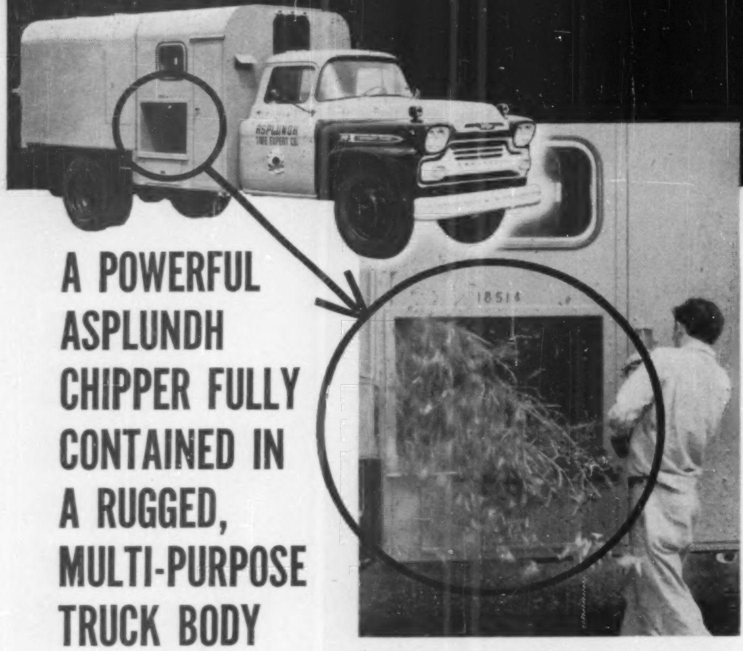
Convincing way to substantiate facts with clearly printed proof

Only a Remington Rand "99" can print a tape like this! It reads from top to bottom as easily as the final inventory sheet based on it . . . date, department, catalogue numbers, total! A tape anyone can understand—today or next year—no matter how complicated the problem. Why? Because the "99's" exclusive Control Key eliminates confusing figures . . . actually makes operation simpler. For complete information call your nearest Remington Rand Office or write Room **120AC,** Remington Rand, 315 Park Avenue South, New York 10, N. Y.

Remington Rand

DIVISION OF SPERRY RAND CORPORATION

NEW Especially designed for municipal use . . .



A POWERFUL ASPLUNDH CHIPPER FULLY CONTAINED IN A RUGGED, MULTI-PURPOSE TRUCK BODY

Compact, durable, easy and profitable to operate, this completely integrated truck and chipper unit is the most economical answer to municipal brush disposal requirements.

Especially maneuverable in restricted road nets, back alleys and dead-end streets, this new multi-purpose truck unit offers exceptional convenience for all the activities attendant to efficient brush removal. In addition, it is perfectly suited to all types of tree maintenance operation . . . safe, comfortable transportation for personnel and materials.

Fully equipped with a powerful, easy-to-maintain chipper unit (9″, 12″, 16″) and hydraulic dump mechanism, its entire design of operation has been engineered for efficient, trouble-free service by the largest tree company in the world.

As exhibited at American Institute of Park Executives, Phila., Pa. 1959 and the National Shade Tree Conference, Detroit, 1959, along with Asplundh aerial equipment, standard model chippers, and other forestry truck bodies.

For complete information and specifications about any Asplundh equipment, write –

ASPLUNDH
CHIPPER COMPANY
501 York Road, Jenkintown, Pa.
TUrner 7-2500

BY ACTUAL TEST THE FASTEST CHIPPER MADE

CATALOGS *for Improved Municipal Services*

Write to address given or circle corresponding number on free post card on page 53.

New Coagulant Aids For Water Treatment

805 A new series of highly effective flocculating products known as Mogul Claracel has been introduced by NORTH AMERICAN MOGUL PRODUCTS CO., STANDARD BLDG., CLEVELAND 13, OHIO. Write for descriptive literature.

Rebuild Street Cleaning Brooms

806 . . . which with a 16-gauge steel spiral is available in 10- and 12-inch sizes to fit most popular makes of cores. The spiral is simply and easily applied by slipping over the old housing and welding into position. Write for further details to BEN-KO-MATIC, INC., 8028 N. JERSEY ST., PORTLAND 3, ORE.

New Easy-to-Handle Grader

807 For a rugged motor grader for your street work you will want more information on No. 12E which provides greater lugging ability and load handling capacity, gives positive in-seat starts in any weather, cuts maintenance. Write for printed matter to CATERPILLAR TRACTOR CO., GENERAL OFFICES, PEORIA, ILL.

Traffic Survey Aid

808 Catalog 35-1544 describes a portable Traffic Recorder that will measure traffic on your fastest, most crowded thoroughfare accurately, in a manner easily read, understood and translated. Write for your copy to FISCHER & PORTER CO., WARMINSTER, PA.

Restore Sewer Capacity

809 To restore your sewers to their original capacity, removing roots and caked sediment, the EXPANDING SEWER MACHINE CO., 108 E. WALNUT ST., NAPPANEE, IND., offers its Expanding Root Cutter, Sewer Cleaner. For details ask for Catalog No. 60.

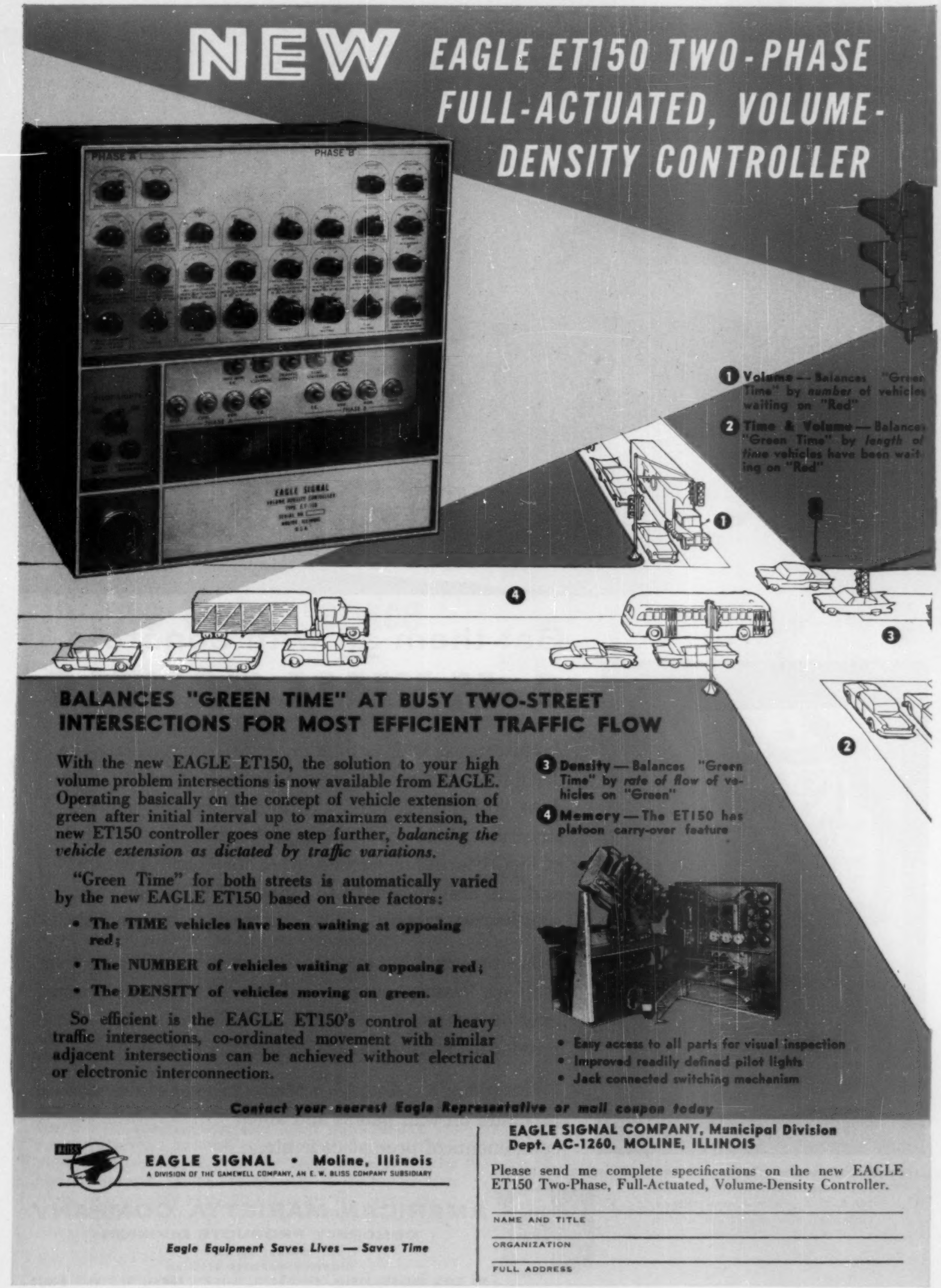
Hauls Up to 200 Yds. Refuse

810 If your refuse disposal area is far removed from your city, you will want to know about the new all-hydraulic Dempster compaction trailer which will haul from 160 to 220 cubic yards of loose refuse per trip. Write for descriptive brochure to DEMPSTER BROTHERS, INC., DEPT. AC-7, KNOXVILLE, 17, TENN.

Wedge-Lock Clay Pipe

811 Wide acceptance of Wedge-Lock clay pipe with the factory-made double-ball, compression, joint, is confirmed in a 12-page, "case history" booklet, released by WEDGE LOCK CLAY PIPE MANUFACTURERS.

Copies are available on request from CANNELTON SEWER PIPE CO., CANNELTON IND.; CLAY CITY PIPE CO., UHRICHSVILLE, OHIO; GRAFF-KITTANNING CLAY PRODUCTS, WORTHINGTON, PA.; LARSON CLAY PIPE CO., DETROIT, MICH.; LEHIGH SEWER PIPE & TILE CO., FORT DODGE, IA.; LOGAN CLAY PRODUCTS CO., LOGAN, OHIO; OWENSBORO SEWER PIPE CO., OWENSBORO, KY.; POMONA TERRA-COTTA CO., GREENSBORO, N. C.; ROBINSON CLAY PRODUCT CO., AKRON, OHIO; SUPERIOR CLAY CORP., UHRICHSVILLE, OHIO.



NEW EAGLE ET150 TWO-PHASE FULL-ACTUATED, VOLUME-DENSITY CONTROLLER

① **Volume** — Balances "Green Time" by *number* of vehicles waiting on "Red"

② **Time & Volume** — Balances "Green Time" by *length of time* vehicles have been waiting on "Red"

BALANCES "GREEN TIME" AT BUSY TWO-STREET INTERSECTIONS FOR MOST EFFICIENT TRAFFIC FLOW

With the new EAGLE ET150, the solution to your high volume problem intersections is now available from EAGLE. Operating basically on the concept of vehicle extension of green after initial interval up to maximum extension, the new ET150 controller goes one step further, *balancing the vehicle extension as dictated by traffic variations.*

"Green Time" for both streets is automatically varied by the new EAGLE ET150 based on three factors:

- **The TIME vehicles have been waiting at opposing red;**
- **The NUMBER of vehicles waiting at opposing red;**
- **The DENSITY of vehicles moving on green.**

So efficient is the EAGLE ET150's control at heavy traffic intersections, co-ordinated movement with similar adjacent intersections can be achieved without electrical or electronic interconnection.

③ **Density** — Balances "Green Time" by *rate of flow* of vehicles on "Green"

④ **Memory** — The ET150 has platoon carry-over feature

- Easy access to all parts for visual inspection
- Improved readily defined pilot lights
- Jack connected switching mechanism

Contact your nearest Eagle Representative or mail coupon today

EAGLE SIGNAL • Moline, Illinois
A DIVISION OF THE GAMEWELL COMPANY, AN E. W. BLISS COMPANY SUBSIDIARY

Eagle Equipment Saves Lives — Saves Time

EAGLE SIGNAL COMPANY, Municipal Division
Dept. AC-1260, MOLINE, ILLINOIS

Please send me complete specifications on the new EAGLE ET150 Two-Phase, Full-Actuated, Volume-Density Controller.

NAME AND TITLE

ORGANIZATION

FULL ADDRESS

What do you want in an exterior wall material?
Beauty
ECONOMY
COLOR
Versatility

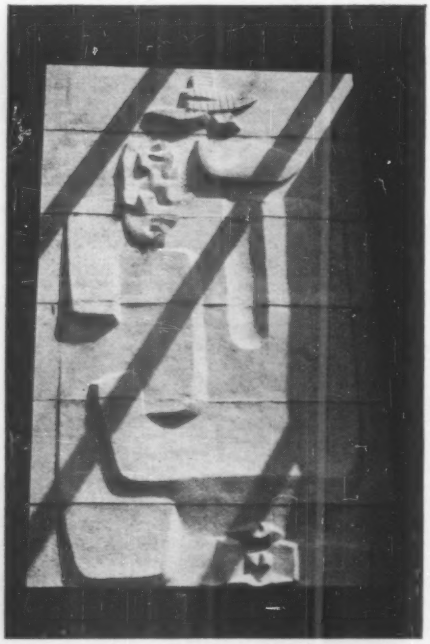
Get them all with concrete

A-M WALL PANELS

Architects, as well as building owners, appreciate the decorative and money-saving features of precast A-M Wall Panels as part of an all-concrete element structure. Plain concrete or exposed aggregate panels, of load bearing or curtain type, speed construction and add unique beauty to industrial buildings and warehouses, schools, offices and apartment buildings.

Other precast concrete elements such as roof and floor systems, beams, columns and foundation grade beams may be combined with A-M Wall Panels to provide an infinite variety of architectural designs.

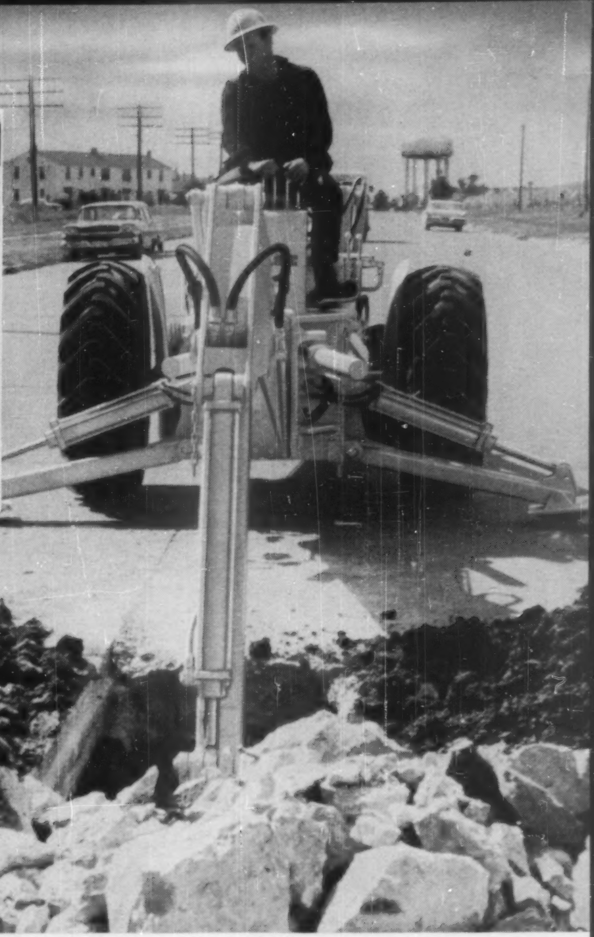
Write today for American-Marietta's colorful new brochure on wall panels and allied components of precast concrete.



One of over two thousand 2½ ton sculptured wall panels supplied by A-M for McCormick Place, Chicago's new exhibition center.

A-M
AMERICAN-MARIETTA COMPANY
CONCRETE PRODUCTS DIVISION
GENERAL OFFICES:
AMERICAN-MARIETTA BUILDING
101 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS, PHONE: WHITEHALL 4-5600

Rugged Case-built backhoe cuts 14′ deep, reaches-out 16′9″ to dig, swings 180° with foot-pedal control for smooth, fast dig-and-dump. Regular buckets dig square holes 7′ long x 6⅔′ deep or 10½′ long x 9⅓′ deep. Bell-hole type also available among choice of 8 buckets.



Brawny Case 530 loader lifts 2000 lbs. to full height, dumps with over 9′ clearance for quick dump-and-go. Choice of 5 buckets including 1-cu. yd. snow bucket . . . interchangeable pallet fork, crane boom, rubbish fork, and log fork for multiple material handling.

How to work 2 places at once... to give faster service at low cost

DIGGING • LIFTING

HANDLE WITH CASE *Utility*

LOADING • CARRYING

One of the easiest ways to handle more jobs per day is to be sure you're not over-equipped for "run-of-the-mill" work. Large machines have a definite place on your equipment list. But why let costly large-capacity machines dominate the list?

Simple arithmetic shows that for small and medium-size tractor jobs, *you can own two Case 530 Utility machines at the cost of one larger outfit*. You can select, say, a 530 Backhoe-Loader *plus* a 530 Loader machine and work two projects at once, instead of one. You'll give faster service on "complaint" calls, speed new construction and keep maintenance on regular schedule at lower cost. And at the same time, you'll cut per-job expense for fuel, upkeep, repairs and insurance. There are savings in transportation costs, too, because you can drive the rigs from job to job instead of tying up a truck or trailer and additional manpower.

Yet, with all this economy, rugged Case 530 tractors give you *heavy-duty work-power and exceptional job versatility*. They provide tremendous dig-power for loader work with high-torque *gasoline or (optional) diesel engine* . . . extra traction with special 14.9-24 tires . . . reverse direction instantly with synchronized shuttle transmission . . . back up 24% faster than forward . . . turn sharply with power-steer . . . travel job-to-job up to 18 mph. Loader unit accommodates instant-operable center-mounted rotary mower, rear rotary and side cutter-bar mowers. Rear hitch operates all-purpose blade, scarifier-scraper and other attachments for year-round usefulness.

Call your Case Dealer today for free demonstration of a *pair* of versatile Case 530's. See how you can nearly double your work output on a wide range of everyday trenching-loading jobs . . . give faster and better service, even on a limited budget.

CASE® *Utility*

J. I. CASE CO., Dept. M1560, RACINE, WIS.

☐ Send full details on Case 530 *Utility* Loader and Backhoe-Loader units. I am also interested in ....

Name.. Title..................

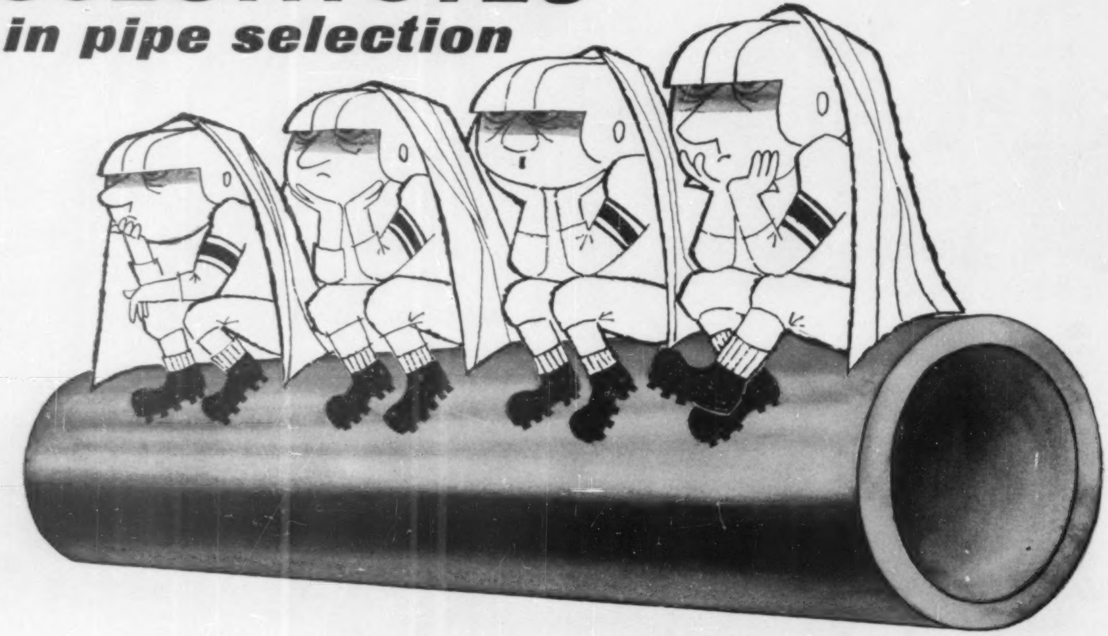
Employed by ....

Address ....

City.. State..................

CU-BL-268

no place for SUBSTITUTES in pipe selection



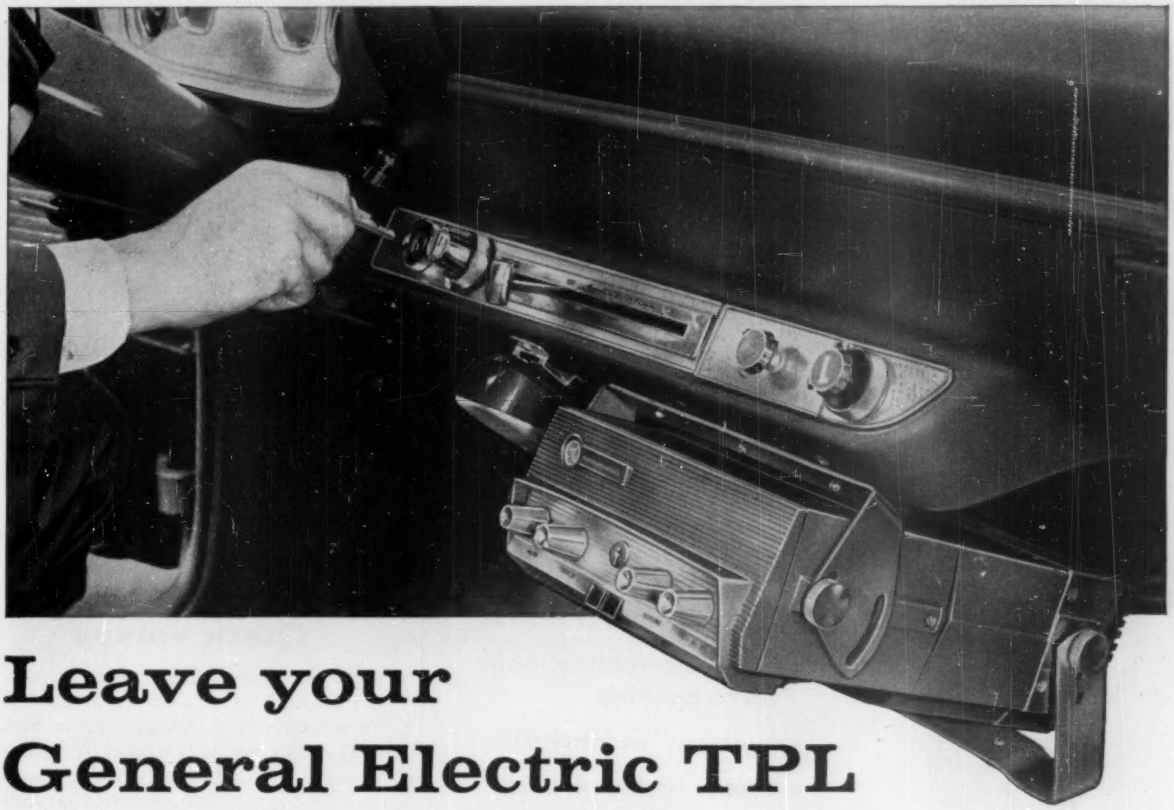
Check the score before experimenting with substitutes for cast iron pipe!

POINTS TO COMPARE	CAST IRON PIPE	SUBSTITUTE PIPE
Long Life	100 Years or more	?
Bursting Pressure	2,988 psi	746 psi
Bursting Tensile	25,880 psi	3,430 psi
Impact Resistance	234 ft. lbs.	60 ft. lbs.
Beam Loads (12-foot span)	20,790 pounds	3,060 pounds
Crushing Loads	17,900 lbs. per ft.	6,480 lbs. per ft.
Water Absorption	None	9.8% of weight after 24-hour submersion
Tight Joints	Wide selection for liquid or gas service	Limited selection for water service
Inside Diameter	6.14″	5.85″

Pipe tested were 6″ Class 150.

AMERICAN
CAST IRON PIPE CO.
BIRMINGHAM ALABAMA

SALES OFFICES: Chicago
New York City — Kansas City
Dallas — Minneapolis — Denver
Pittsburgh-Orlando-Cleveland
Birmingham



Leave your General Electric TPL 2-way radio on while your engine is off!

LOWEST BATTERY DRAIN AVAILABLE

Other makes of mobile radio drain your battery severely, even on standby. Unless you keep the engine running, this will inevitably shorten the life of your battery. And if you *do* run the engine while your vehicle is standing still, you're letting yourself in for a whole series of other problems—increased gas consumption, increased engine wear, special generators, etc.

Not so with TPL! Standby battery drain on General Electric's new Transistorized Progress Line is so low you need never turn off the TPL unit in your vehicle. By actual measurement, drain is less than 40 milliamperes, or only 1/25 of the current that runs your dome light. And even when the receiver is talking, drain is only 540 milliamperes.

With only four tubes in the TPL transmitter, you require no special generator, use less gas and need fewer engine jobs. The cost of operating your two-way radio system goes way, way down.

Get the full story on TPL—the smallest, most reliable two-way radio you can buy today. Write General Electric Company, Communication Products Dept., Section 1120, Mountain View Road, Lynchburg, Virginia.

GENERAL ELECTRIC

EDDY New Improved Products Meet Modern Needs

EDDY VALVE CO.
S
60
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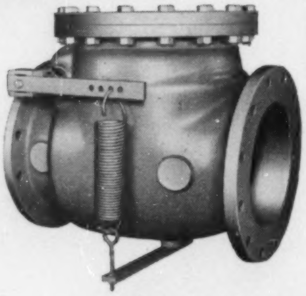

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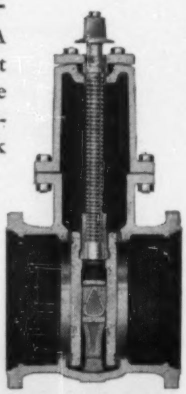
EDDY Gate Valves



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WATERFORD
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DIVISION OF **ALCOA**

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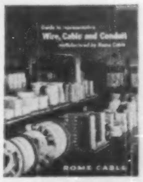

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Figure it this way: ■ Write down the revenue you earn each year from the average meter: $________. Now multiply this by seven (the number of years many Commissions permit a meter to stay in service before retest) or by the number of years required by *your* local regulations. ■ What have you got? $________. A figure somewhere in the neighborhood of $350 to $700? That's the money you entrust to just one water meter while your back is turned. That's the money it earns, twelve to twenty times its price. ■ Like any instrument, a meter runs slow as it wears, and gives water away before it is brought in for test and repair. Now if *one* meter, by virtue of better design and workmanship, stays accurate and brings in just 1% more revenue over the years, how many extra dollars is that worth to you? $3.50? $7.00? ■ That's how much more you could afford to pay for a Trident water meter. ■ There's extra value, too, in Trident's interchangeable design. New Trident parts fit old Trident meters. This "no obsolescence" feature insures automatic modernization, keeps repair costs down and protects your meter investment. Ask your Neptune representative for the facts.

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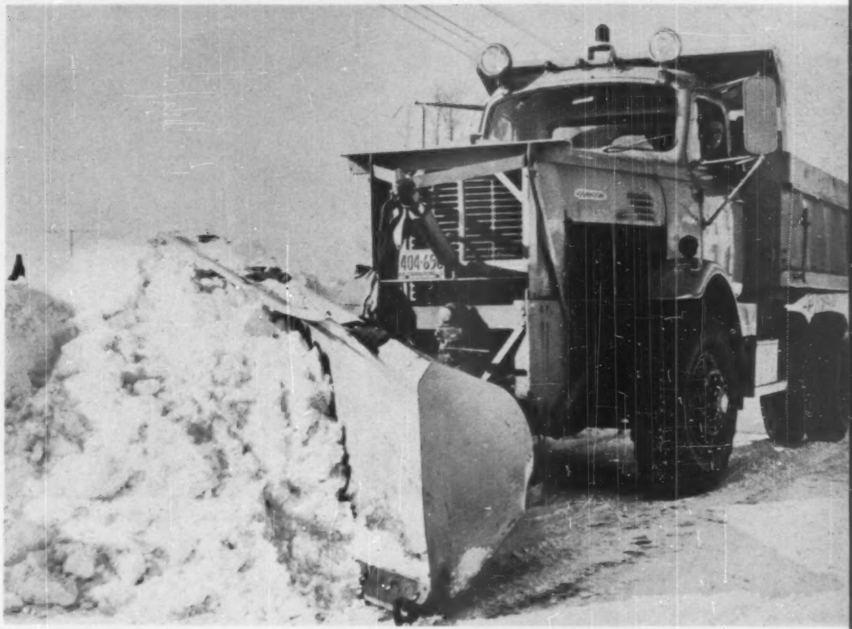
DECEMBER 1960

The American City

Snow and Ice Control in Jamestown, N. Y.

. . . is based on the use of modern equipment but cinders and old-fashioned "horse" power play their part

By **L. A. BERGMAN**
Director of Public Works



Jamestown has two heavy-duty trucks like this one for tough snow-fighting tasks.

With an average annual fall of slightly over 96 inches, snow poses some trying problems for the City of Jamestown, N. Y. However, sleet and ice conditions are a still bigger headache; although we use modern spreading equipment and suitable chemicals, the operation is successful only about 80% of the time. We also use considerable quantities of abrasives for greater effectiveness under certain conditions.

Our topography works against us in winter. Located in the southwest corner of New York state, this city of 43,000 population covers about ten square miles of hilly terrain with an elevation variation of some 300 feet. Because of the old gridiron pattern, many street grades exceed 20% with a maximum grade of 23½%. About 97 of the city's 130 miles of streets are paved.

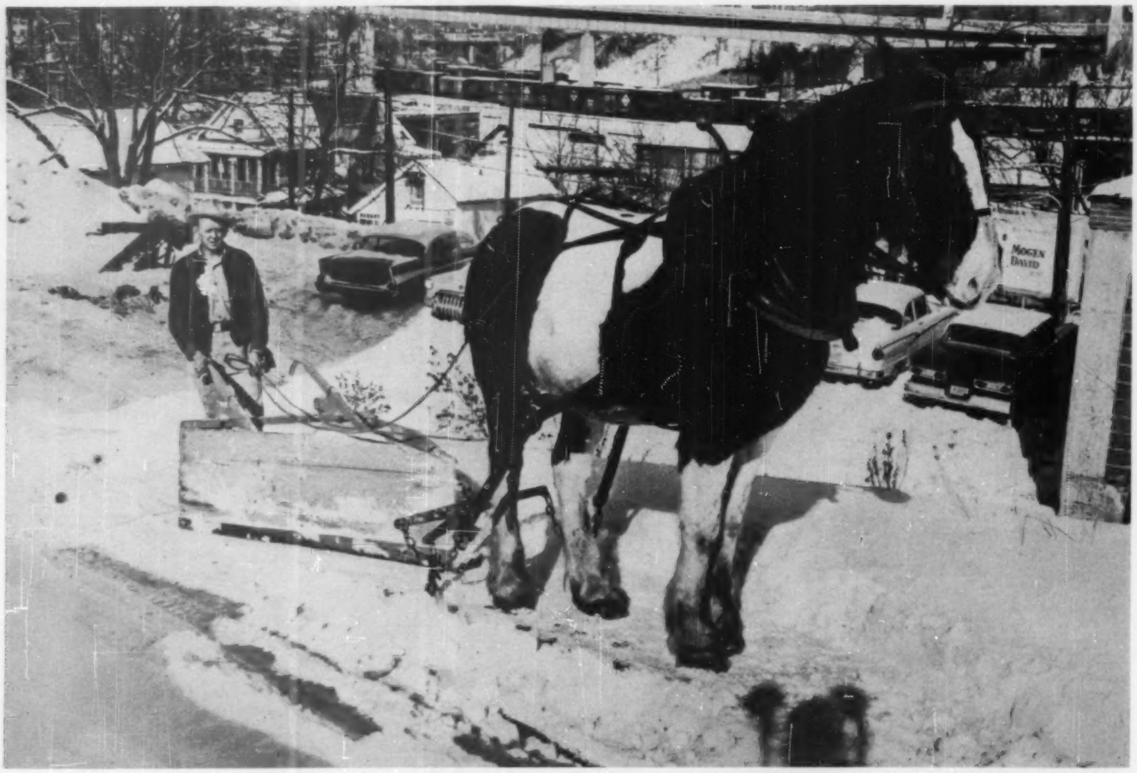
Ice Control

Sleet storms are a common occurrence in Jamestown, glazing the hills with an impassable coating of ice which brings all traffic to a standstill. Upon the first warning, which usually comes via the Police Department, our four Baughman spreaders start on their predetermined routes. A Hough Payloader with a one-yard bucket loads the spreaders each time they return to the yard.

To support the large spreaders and perform their duties in case they have an accident or breakdown, we have two Tarco "Scotchman" spreaders mounted on pickup trucks.

Each year we use about 2,100 tons

Mayor Carl Sanford (with hat) and Councilman Norman Herby insist on efficient equipment like this for hurry-up snow and ice control.



Scenes like this are not uncommon in Jamestown; putting Old Dobbin to work represents a decision based on practical economics.

of salt purchased from the International Salt Company at nearby Restof, N. Y. In addition we obtain some 900 cubic yards of cinders each year from the municipal power plant, located adjacent to the Public Works Garage. These are stockpiled during the summer for use as needed.

Snow

For snow plowing we have nine trucks of various makes equipped with Frink one-way plows, the type that has proved best for our purpose. Recent replacements to this fleet are two four-wheel-drive Oshkosh eight-ton dump trucks and two International model B-170 trucks. We also use the two city-owned Austin-Western graders (one fitted with a dozer blade and the other with the regular blade), two Hough Payloaders, and an International TD-14A dozer-equipped tractor. Three Farmall tractors with Meyer plows clear alleys, narrow streets and sidewalks in the business district.

The Park Division removes snow in the business district, on two main bridges, and seven off-street metered parking lots. This work usually starts about 11:P.M. with the tractors and a new Gravely unit with a three-foot blade clearing the walks and the large graders moving the snow to a windrow in the center of the street. Loading starts at midnight. Our Athey loader does the bulk of the work, however, the front-end loaders normally clear the parking lots.

City trucks, and privately owned trucks if needed, haul the snow to one of two unloading ramps located on the banks of the lake stream. We favor the one opposite the power plant, because the discharged cooling water from the condensers keeps the stream open all winter.

Following snow removal, the spreaders apply a thin layer of salt. This usually results in ice-free pavements by the start of the morning rush traffic.

Sidewalk Plowing

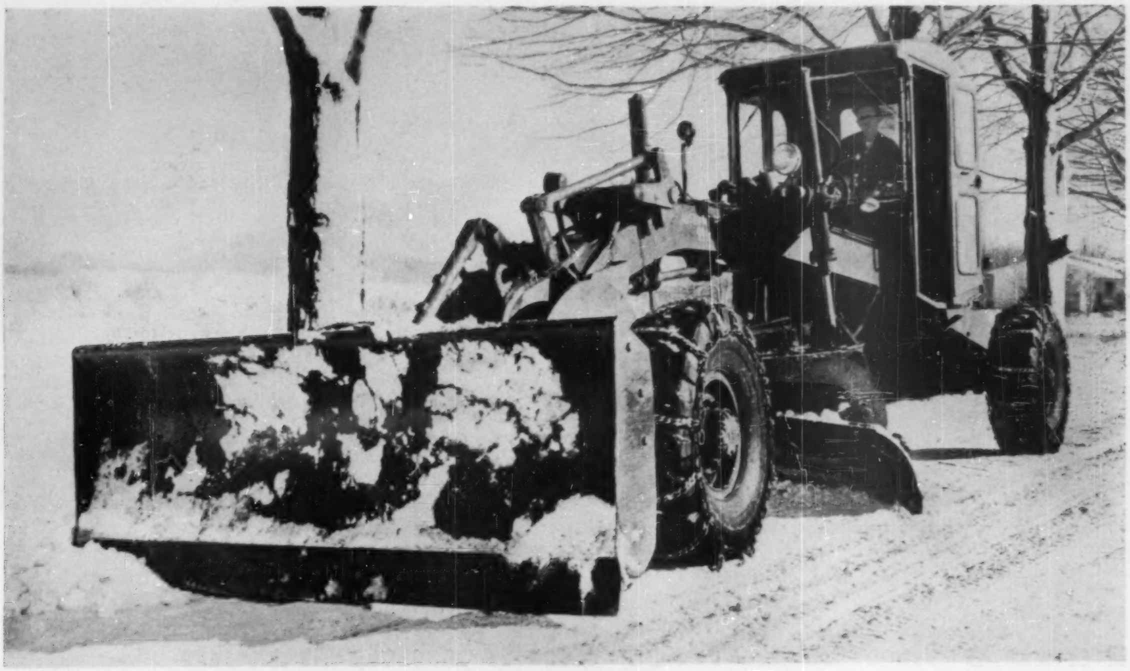
We still use "Old Dobbin" for motive power to plow about 200 miles of walks, divided into 34 routes of approximately six miles each. Three contractors furnish the horses and drivers to pull city-owned and city-built wood V-plows. We guarantee each contractor 20 trips per season; the present cost is $27 per trip. This amounts to five to ten cents per lot but the city makes no direct assessment.

We did use tractors on three routes about ten years ago but had to abandon this operation because of poor success with the heavy drifts and steep hills. Now that better tractors are available, we are again considering motorized equipment for these routes.

The Jamestown airport, located only four miles from town, demands more attention each year because of increased traffic. At present two major airlines serve the city with 13 flights daily, and many private planes use the facility throughout the year.

For the past eight years we have had the help of the County Highway Department on this task. Their equipment is particularly suited for this type of work. Generally, two large trucks with one-way and wing plows cover the runways, making a windrow on each side about one truck-width from the edge. Then a large SnoGo blows it well back from the runway.

The main runway is 5,300 feet long and the two auxiliary strips



Two graders, one with a dozer blade, augment the plow-equipped truck fleet.

These two plow-equipped tractors clear snow from walks, alleys and parking lots.

are 1,850 feet and 2,700 feet long. All are 100 feet wide.

For ice conditions a seven-yard truck with a spinner-type spreader covers the runway with sand. A local gravel pit operator located seven miles from the airport does this work and is paid on a cubic yard basis. The operator is on call during the winter and this works well, for winter is normally his slack season.

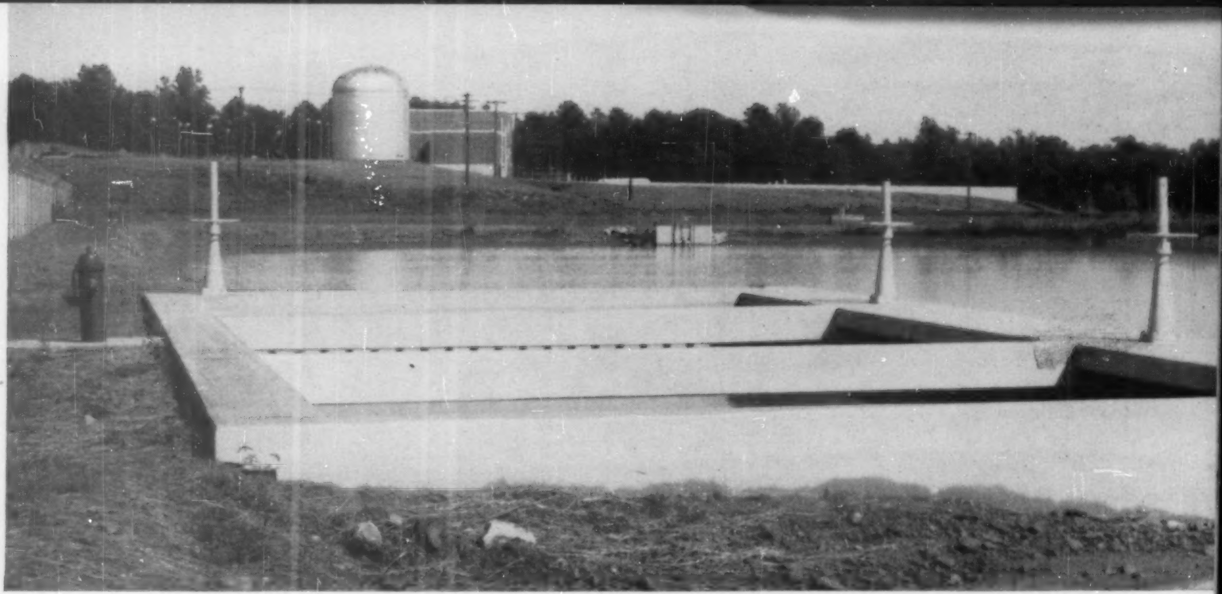
Like all other cities, we have the parking problem. However, Police Chief John Paladino extends the full cooperation of his department by having cars moved or towed away if necessary.

Parking Plan

The greatest help came through the adoption of an ordinance, effective August 1, 1959, setting up an alternate parking plan. Under this system, the city permits parking on the side of the street with odd house or building numbers on the odd calendar days and on the side with even numbers on the even calendar days. The changeover takes place at 10: A.M., thus we can plow each side of the street at least every other day. This system had much to do with making last year's snow-plowing program the most effective in our experience.

Personnel management has proved to be another important aid. We have only 70 men in the streets division and 13 men in the parks division. We have found through experience that the parks division can perform the work assigned to it, permitting the streets division to concentrate on plowing and ice control. But additional help is often needed and here we make full use of the Work Relief Program as authorized under the Welfare Law. In this manner we use men who are getting welfare assistance to shovel snow on plugged streets and sidewalks. The Parks Department supervises.

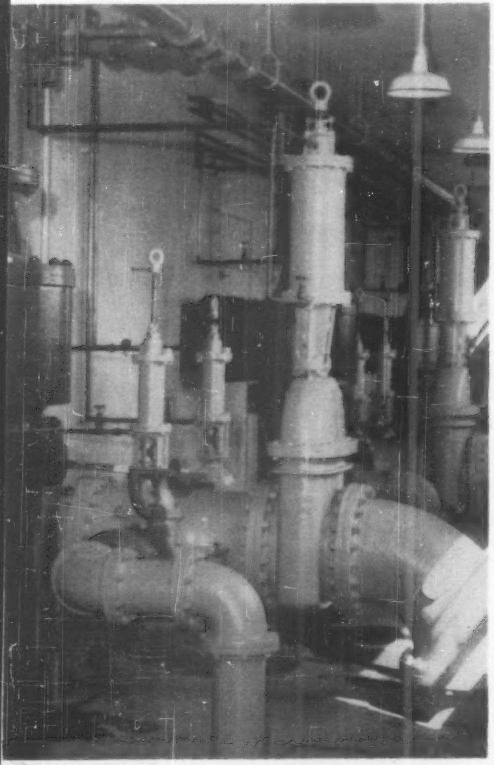
Finally, good equipment in sufficient amounts pays big dividends. In this respect we have the wholehearted support of Mayor Carl F. Sanford, for he is convinced that modern equipment is necessary for efficient operation. As a result, our recent purchases in addition to those already mentioned include the Athey snow loader, a Case model W12 front-end loader, a Massey-Ferguson tractor with a seven-foot Athey snow loader, a Case Model and an International dump truck. A two-way radio system has also been authorized and will be in service for the 1960-1961 season. ◄◄



Under normal operating conditions raw water enters the storage reservoirs through a hopper-type stilling basin where the remaining sand filters out.

Double the Water for Continued Growth

Shelby, N. C., expands the newest of its two water filtration plants and keeps the old facility for standby service



Four filters were added to the two existing units, bringing filtration capacity up to 6 mgd. This is a view of the new pipe gallery.

By **F. C. COCKINOS, P.E.***

Increased home construction and the location of new industries in Shelby, N. C., mushroomed water use an annual average of 13% from 1955 to 1959. The 17% increase in 1959 provided the final incentive required for immediate action to expand existing water treatment facilities.

The city obtains water from the First Broad River, which provides a minimum yield of approximately 13 mgd, and purifies it in two filtration plants, one constructed in 1927, the other in 1952. Each plant had a capacity of 2.0 mgd.

When summer of 1959 found the two plants processing an average of 2.19 mgd, with a peak load of 3.99 mgd in August, the city authorities retained the architectural and engineering firm of J. N. Pease and Company of Charlotte, N. C., to prepare plans and specifications for additions to the 1952 plant. The project, started in October 1959 and completed one year later, consisted of adding various units, renovating existing facilities, and substituting larger equipment where necessary. This work increased plant capacity to 6.0 mgd, permitting the city again to place the 1927 plant on a standby basis.

Raw Water Facilities

A modification to the existing desilting aeration tank included the installation of a four-inch Hapman conveyor to discharge accumulated sand directly into a small creek. This neoprene chain conveyor has a capacity of 15 cubic feet per day when traveling at a speed of five feet per minute.

Original pumping equipment consisted of two De Laval pumps rated at 2,800 gpm at 130-foot head and 1,500 gpm at 117-foot head. New additions consisted of replacing the smaller unit with a 2,800-gpm, 132-foot head pump and purchasing an

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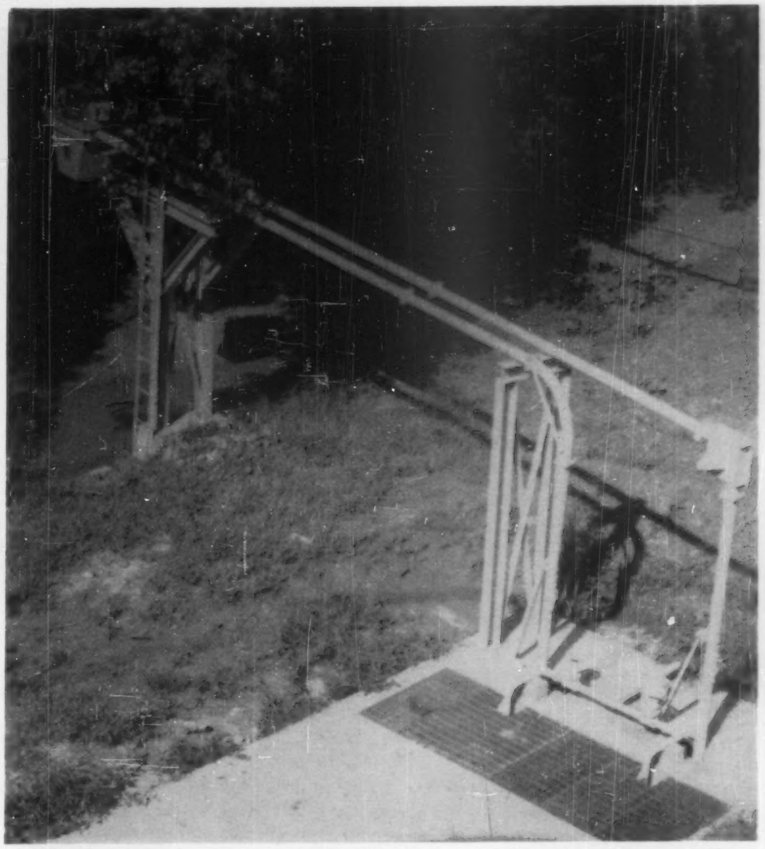
* Mr. Frank Cockinos is a member of the consulting firm, J. N. Pease and Company of Charlotte, N. C.



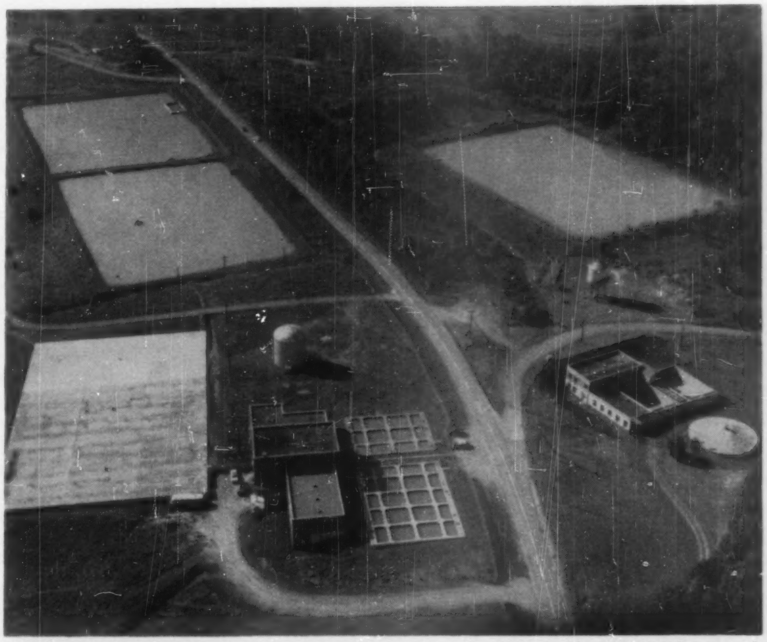
This tubular conveyor removes sand from the raw-water desilting tank and dumps it into a small creek.

identical pump to serve as a spare. The new pumps have a drive shaft at each end making it possible to use them as universal replacements if necessary. A 125-hp General Electric motor provides the driving power for the replacement unit.

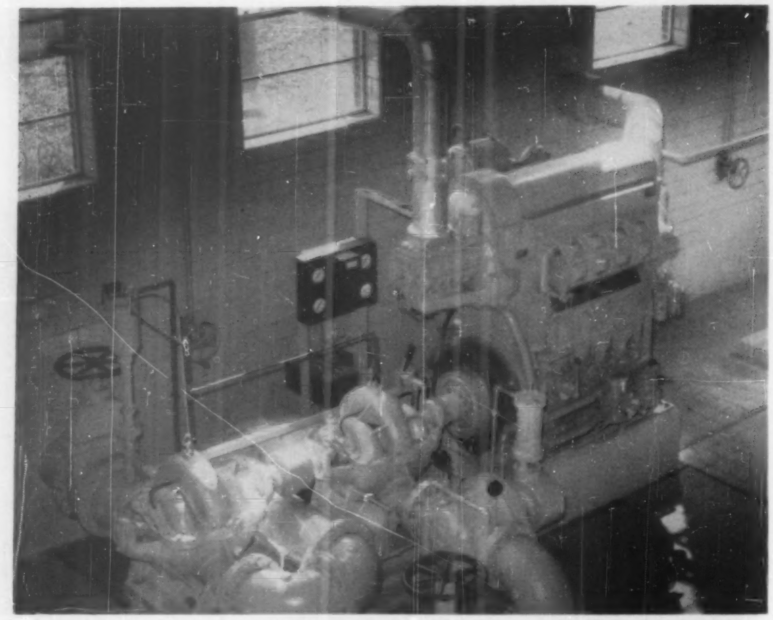
A new 24-inch cast-iron raw-water line laid adjacent to an existing 16-inch line helps convey water from the raw-water pump station to the storage reservoirs.

Construction of a new 6,000,000-gallon earth-dike reservoir increases raw-water storage capacity to 19,000,000 gallons. Existing reservoirs No. 1 and No. 2 have capacities of 5,000,000 gallons and 8,000,000 gallons respectively. Reservoirs No. 2 and No. 3 are connected with two equalizing pipe lines and transfer pumps convey water to reservoir No. 1.

Under the present procedure raw water enters reservoir No. 3 through a concrete hopper-type stilling basin capable of removing remaining sand and silt. The two valley-ridge compartments provide a combined detention time of 30 minutes and have a volume of 8,515 cubic feet. Raw water is then pumped from reservoir No. 2 (filled via the



Highway 226 divides Shelby's water treatment facilities. The 1927 plant and reservoir No. 1 are to the right; the 1952 plant and the new additions are at the left of the highway.



In case of electrical power failure, this diesel engine coupled to two centrifugal pumps connected in series takes over the high-service load. Pump capacity is 2,100 gpm at 218-foot head.

equalizing lines) to reservoir No. 1 from which it flows through the plant by gravity.

The newly constructed transfer pump station houses two existing 2,100-gpm pumps (one Fairbanks, Morse and one De Laval) and a new 2,800-gpm, 52-foot head F-M unit. These pumps take positive suction through a 24-inch cast-iron line from reservoir No. 2 or 3.

Purification Units

Two concrete flocculation basins 31 feet long, 15⅓ feet wide with a 15-foot side-water depth and four concrete sedimentation basins 65 feet long, 22 feet wide with 15-foot side-water depths augment the existing units. The plant now has two flash-mixing basins, four flocculation tanks and six sedimentation tanks. The new flocculation tanks provide 40 minutes detention period at 4.0 mgd and the sedimentation tanks have an overflow rate of 700 gallons per square foot per day at a flow of 4.0 mgd. Equipment installation included Rex Slo-Mix paddle-type flocculators in the new basins and a 5-hp Chain Belt propeller-type flash mixer in the one flash-mixing basin not already equipped.

Crossover connections permit either the new or existing units to be operated separately or simultaneously and also to mix and coagulate raw water for the standby 1927 plant as was done prior to the expansion program.

The four new 1.0-mgd filters are identical in size to the existing two units. Area dimensions are 14 feet by 26 feet and the filter rate is two gallons per minute per square foot. Other features include side gutters, Wheeler bottoms, four concrete wash troughs, two Palmer sweeps and a marble operating table. The Roberts Filter Manufacturing Company handled construction of the filter components, other than concrete. The filter waste valves are Roberts Filter design while the influent, effluent, and rewash valves are all Darling units, with the wash valves being square bottom units. All valves in the filter basin are hydraulically operated.

Operating table equipment includes Simplex loss-of-head and rate-of-flow dials, five operating levers, a filter-sweep control valve, pressure cut-off valve, and switches for electric lights over the filters. The rate-of-flow controller valve is of the type "S" as furnished by Simplex. Filter media consists of five three-inch layers of gravel ranging in size from "torpedo gravel" to one inch to ⅝ inch and two feet of sand having an effective size of 0.50 mm and a uniformity coefficient of 1.50.

Filtered water flows by gravity through a 20-inch cast-iron pipe to the fresh-water clear wells.

Chemical feed equipment in the 1952 plant included three Omega loss-of-weight gravimetric feeders with dust collectors for feeding lime, alum and fluoride, plus one universal feeder for carbon. Later a second universal feeder was added as a standby unit for post lime feeding as required.

New additions included one Model 70-1 Omega dust collector for the standby unit and two Hagan chemical feeders for feeding of Calgon to the effluent.

The new contract also called for additional metering equipment. This consisted of two Bristol transmitters and recording and totalizing receivers and two new Simplex wash water indicators. The latter were connected to the existing transmitter and recorder located in the plant office.

Storage and Pumping

Two existing concrete clear wells have a capacity of 2,000,000 gallons each. Construction of a similar unit brings the total clear-well capacity to 6,000,000 gallons. Baffle walls, equalizing gate valves and piping arrangements permit finished water to be introduced to or drawn from either of the wells separately or in series. A "bubbler" water-level system replaced the old pressure-bulb type.

The only addition to the high service pumping facility consisted of a new 300-hp Fairbanks, Morse diesel engine directly coupled to a 2,100-gpm, 318-foot-head pump to be used in case of electric power failure. A Quincy air compressor with a capacity of 10 cfm at 2,500 psi furnishes air to the engine cylinders for starting.

Existing equipment for high-service pumping includes four F-M pumps and motors ranging in capacity from 1,050 gpm to 2,100 gpm at 318-foot head. Also a Climax 219kva gasoline engine generator serves as standby.

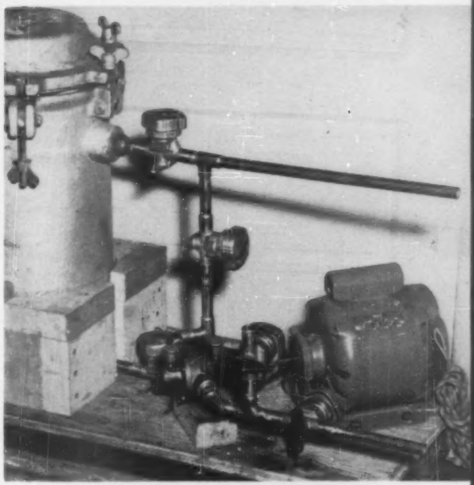
Shelby now has raw-water storage capacity of 19,000,000 gallons, filtering capacity in the remodeled plant of 6 mgd plus 2 mgd as standby in the 1927 plant, clear-well capacity of 6,000,000 gallons plus an additional 1,000,000 gallons available in elevated storage throughout the city.

The work which has been described, cost approximately $600,000 and was done under the administration of Mayor H. S. Woodson. Robert Van Sleen is the city's superintendent of utilities. ◄◄

A Flow of Money-Saving Ideas

. . . is the big dividend Philadelphia receives from its employee-suggestion program

By **TINA V. WEINTRAUB,** Deputy Managing Director



Suggested use of a portable electric pump to slush acid through condenser coils in refrigeration equipment has cut labor requirements from six hours by two men to only 20 minutes by one man. The suggestion earned $350 for Kiyoto Murao, refrigeration foreman.

Philadelphia's suggestion system provides a constant flow of fresh ideas to improve municipal operations.

Employees suggest methods to improve work efficiency, reduce operating costs and provide better service to the public. The city rewards those with practical contributions in a practical way—in the form of cash awards which reflect the savings achieved through operational economies and service improvements.

To insure management identification with the program and to enlist the active support of all levels of supervision, each city department administers its own program under central direction. Program coordinators with guidance furnished by departmental committees carry out the necessary processing operations which require an individual acknowledgement of each suggestion submitted, initial evaluation by knowledgeable operating personnel and review by the full departmental committee. All suggestions that are approved by the departmental committees are referred to the Awards Board for consideration for cash awards.

Executive Committee

The Deputy Managing Director serves as Chairman of the Awards Board whose members include the Personnel Director, the First Deputy Finance Director, the City's Labor Relations Consultant and the Chairman of the Labor and Civil Service Committee of the City Council.

This group also functions as an Executive Committee for policy and procedural matters affecting program direction, promotion and acceptance. Technical and administrative assistance is furnished by the Personnel Development Advisor who serves as Program Director and Executive Secretary to the Awards Board.

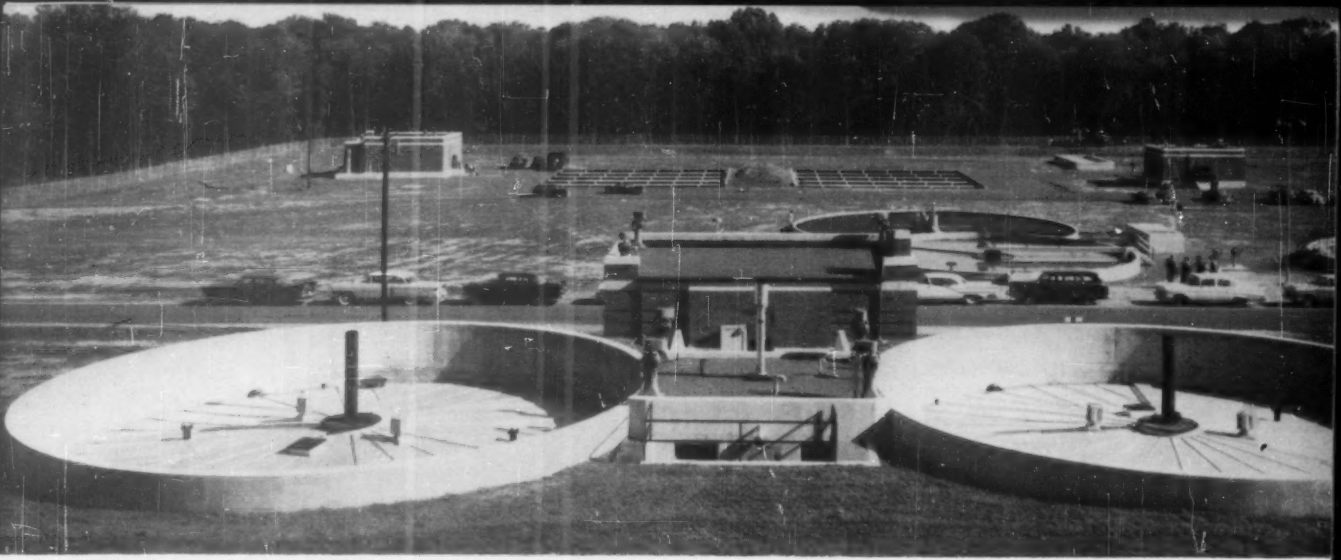
Payment of cash awards based upon savings expected to accrue to the city government in the first year in which the suggested improvements are in operation is governed by a formula which provides a minimum award of $25 and a maximum award of $500 plus one percent of demonstrable savings above $50,000.

The employee suggestions which produce benefits in safety, health, welfare, employee morale, etc., receive awards in amounts which measure the value of such benefits in relation to their limited, broad or general application as determined by the Board members. No approved employee contribution receives less than $15. At the end of each calendar year all suggestions given initial awards are reviewed and the two employees whose suggested improvements are adjudged the most outstanding receive grand awards in amounts which may go as high as $250.

The city has received more than 1,000 proposals. The total amount of cash awards now exceeds $2,000 and individual suggested improvements have produced estimated first-year savings ranging from $50 to more than $6,000. Several departments have employees who have become two, three and four-time award winners.

The suggestions have brought the city improved administrative methods; reclaimed obsolete equipment, putting it to new uses; modified equipment, accelerating its operation; conserved materials and supplies; and in a number of instances minimized or eliminated safety hazards. ◄◄

The suggested use of a jet eductor to remove sludge from the sewage digesters and the discharge line of the final settling tanks, has meant that a job once requiring six weeks and the labor of five employees, now needs only two weeks and three employees. This suggestion earned $350 for Mr. Stanley Cywinski, sewer plant maintenance supervisor.

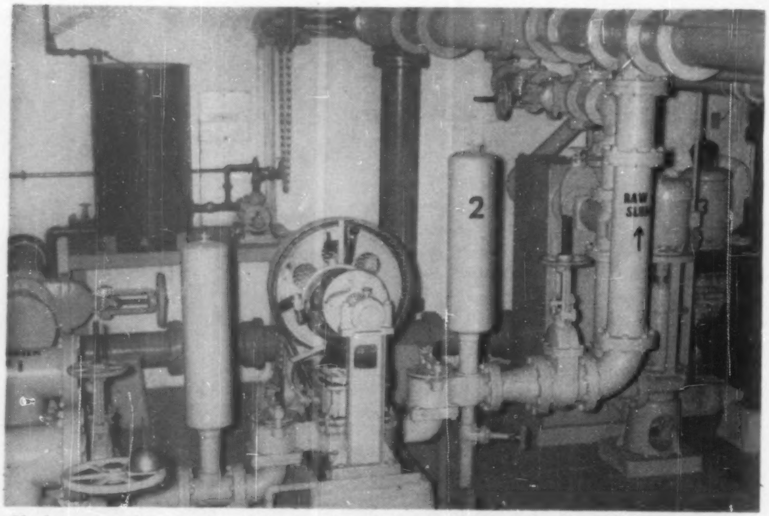


The Parkway Plant, presently capable of treating sewage from a population of 10,000 persons, can be readily enlarged to serve a community of at least 40,000.

The Parkway Plant--Another Milestone

. . . in the Washington Surburban Sanitary Commission's program to provide service to residents of Montgomery and Prince Georges Counties

By **ROBERT J. McLEOD,** Chief Engineer
Washington Surburban Sanitary Commission
Hyattsville, Md.



Sludge pumping equipment consists of two single plunger units, plus one centrifugal pump for digest recirculation.

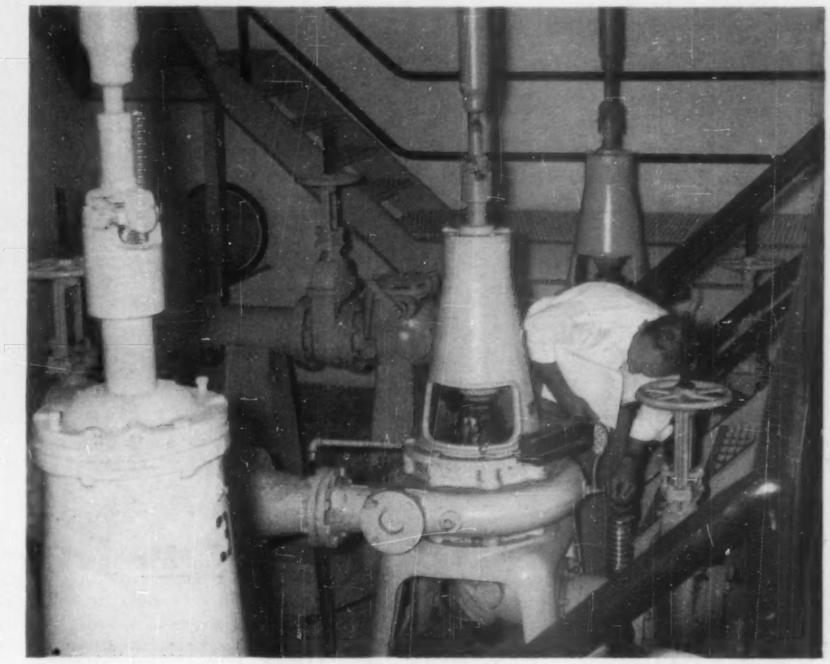
Three years after taking over the Laurel, Md., water and sewerage systems, the Washington Suburban Sanitary District has effectively eliminated raw-sewage pollution of the Patuxent River in the Laurel area. This achievement involved the construction of a three-mile-long 24-inch-diameter interceptor sewer and a high-rate trickling filter sewage treatment plant.

The Parkway Plant, designed to serve the population of 10,000 persons expected in the Laurel area within the next few years, can readily be expanded to serve a total population of 40,000 or more should the need arise. Robert T. Regester, consulting engineer of Baltimore, designed the plant and construction was by Blackwell Engineering Company of Merrifield, Va. The total cost of $1,600,000 includes about $460,000 for construction of the interceptor. The federal government and the State of Maryland contributed $250,000 each toward payment of the project.

The basic design data is as follows:

Population—10,000 persons
Raw sewage BOD—170 ppm
Average daily flow—1.2 mgd
Peak flow—2.4 mgd

The treatment units consist of a



These pumps lift sewage to the primary clarifiers, from which sewage flows through the plant by gravity.

traveling screen and grit removal system, two primary clarifiers, one trickling filter, and a chlorine contact chamber. Sludge is digested in two unheated tanks and dried on uncovered sand beds. Sewage gas is wasted by means of a waste gas burner.

Raw sewage enters the plant by gravity, passes through the screen and grit chamber where the large particles and grit are removed by Link-Belt equipment, and then flows to the wet well. Both units are designed for a capacity of 4.8 mgd.

From here the three Fairbanks, Morse pumps lift the sewage to the clarifiers. Two pumps are rated at 850 gpm and one at 1,700 gpm against a 30-foot head. The motors have ratings of 15 hp and 20 hp respectively. Space is provided for a fourth unit.

A Builders-Providence indicating, recording and totalizing instrument connected to a Parshall flume measures all incoming sewage.

The two primary clarifiers, each 55 feet in diameter with nine-foot side-water depths, provide two hours of detention time at average flow. They have a surface loading of 760 gallons per square foot per day.

The single high-rate trickling filter is 80 feet in diameter and contains four feet of stone filter media or a total volume of 740 cubic yards.

Dosing rate on the 0.115-acre filter area is 21 million gallons per acre per day, including recirculation. The BOD loading amounts to 1,100 pounds per day total settled BOD or 2,440 pounds per acre foot per day.

Both the clarifiers and trickling filter contain Dorr-Oliver mechanical equipment.

Recirculation Provided

Present recirculation equipment consists of two Fairbanks, Morse pumps housed in a separate building. Original construction allows for the installation of two additional pumps whenever the plant is expanded.

The two units now in use are each rated at 1,700 gpm at 30-foot head and are powered by 20-hp motors.

Effluent from the trickling filter passes through a chlorine contact chamber and then to the Patuxent River by means of a 1,000-foot-long open concrete channel.

At average flow the chlorine chamber provides for 20 minutes of contact time. Chlorination equipment consists of two 400-pound-per-day Wallace & Tiernan chlorinators. The plant utilizes ton containers.

Sludge digestion takes place in two unheated digesters each 45 feet in diameter by 19 feet deep, with a total capacity of 60,000 cubic feet or six cubic feet per capita. Equipment consists of Pacific Flush Tank floating covers and a Rockwell gas meter.

The two Marlow simplex sludge pumps driven by 3-hp U. S. Varidrive motors handle all sludge pumping and a single Fairbanks, Morse pump rated at 150 gpm at 25-foot head handles digester recirculation.

The sludge drying beds, divided into two sections with four beds per section, provide a total area of 13,000 square feet or 1.3 square feet per capita.

The Commission dedicated the Parkway Sewage Treatment Plant on October 20, 1959. Now that the plant is complete and in operation, the sewage disposal problem no longer imposes a hindrance to the further development of Laurel and vicinity.

As the area population increases, so will the plant capacity be increased to handle the task of sewage treatment. It represents another step in the orderly growth of the Washington Suburban Sanitary District, a 427-square-mile area in which more than 1,400 miles of sewer lines and 23 pumping stations have been constructed. ◄◄

A Barber-Greene paver, a Galion steel-wheel roller, and a Tampo pneumatic roller work together on one of the street-widening jobs.

75% More Parking On the Street

Rapid City, S. D., provides for more parking today and for more traffic tomorrow

By **L. S. SWANSON**
City Engineer

Seventeen blocks of wider streets in the downtown area of Rapid City, S. D., give our people about 75% more parking space than they formerly had in the same area. We feel this approach to the parking problem has greater merit than spending money for expensive lots in the downtown area for off-street parking at the present time. If and when it becomes necessary to provide more traffic lanes on these streets, we can do so by eliminating on-street parking and providing parking space elsewhere.

Our present plan has one other advantage. It spreads cars over a wide area rather than concentrating them into several lots. Thus at the close of a shopping day or some function held in the area, we are not faced with a sudden exodus of cars from a small area.

Meter Funds Used

Under normal conditions, we finance all street paving by special assessment. However, in the case of the widening program for parking purposes, the city held a referendum asking the people to approve the use of a portion of the parking meter money for this project. This was overwhelmingly approved.

The program consisted of widening the existing 32-foot streets (all of concrete construction) to 68 feet from curb to curb. To do this, we removed the old curb and gutter and added a slab, 16 feet wide and six inches thick, on each side. We of course provided curb and gutter on both sides.

Since the old concrete was badly spalled we raised the edge of the new slabs 2½ inches above the existing one. This allowed for a 2½-inch asphalt overlay on the old street, applied in two courses, a leveling course and a 1½- to 2-inch wearing surface. The gain in parking spaces came about by changing from parallel parking to diagonal parking on a 35° angle, giving us about 75% more stalls.

We held down driveways to a minimum, constructing them only where absolutely necessary for business or an off-street parking lot.

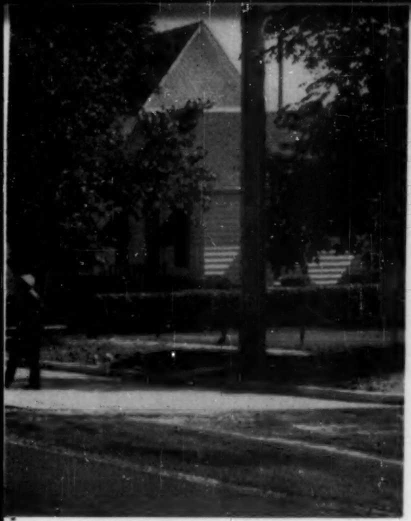
The work already described, plus the paving of 65 blocks of residential streets, formed the largest street-paving program undertaken by the city. This particularly encourages property owners to finance such work by direct assessment. Because of our location on the eastern slopes of the Black Hills, the terrain is irregular and abrupt. This causes much of the area to be sparsely populated, and this means a greater street mileage per taxpayer. Also, this situation strains the maintenance and construction funds of the Street Department.

To overcome the inherent objection to direct assessment work—being forced to pay for something not particularly wanted, all street paving financed in this manner is initiated by the people in the area involved. Those desiring a paving program file a petition with the City Auditor, who in turn gives a copy to the City Engineer. The Engineering Department then prepares preliminary plans and a cost estimate as well as an estimated assessment roll.

Estimated Assessments

The estimated assessments per lot are then mailed to all landowners and a preliminary hearing held. In this manner, all property owners involved are notified not only that here is a project pending but also the estimated cost per owner involved. If, after this meeting, a majority still favors the project, the governing body initiates it by adopting a Resolution of Necessity.

The Engineering Department performs all design work on these projects. To allow time for preparation for early spring contracts, all property owners desiring to have their streets paved must have the



A Caterpillar motor grader finishes off the base course of a 16-foot widening strip while workmen prepare the curb and gutter forms. A Michigan front-end loader and a Caterpillar side loader handled most of the excavation.

petition filed in the Auditor's office by January 1st of the year in which the work is to be done. Petitions filed after this date are held over to the following year.

In 1953 the city adopted an ordinance establishing a minimum street standard requiring that any streets built must be constructed with curb and gutter, 1½-inch asphaltic concrete pavement with a six-inch stabilized base or a five-inch concrete slab with a three-inch sand cushion. These requirements pertain to residential areas with provisions made in the ordinance for special design criteria if the soil conditions, the streets or the traffic should dictate a higher-quality pavement.

In most cases we use the six-inch aggregate base with asphaltic concrete wearing surface; this year all of the residential street paving was of this type.

Following excavation for the new work, we require all soft spots encountered to be excavated and refilled with earth, compacted to 95% of optimum determined by the modified proctor test. Two-inch crushed gravel provided a cushion for the curb and gutter which, in the residential areas, is constructed with expansion joints every 30 feet and contraction joints every ten feet. All concrete work must be cured by impervious membrane or burlap sacking.

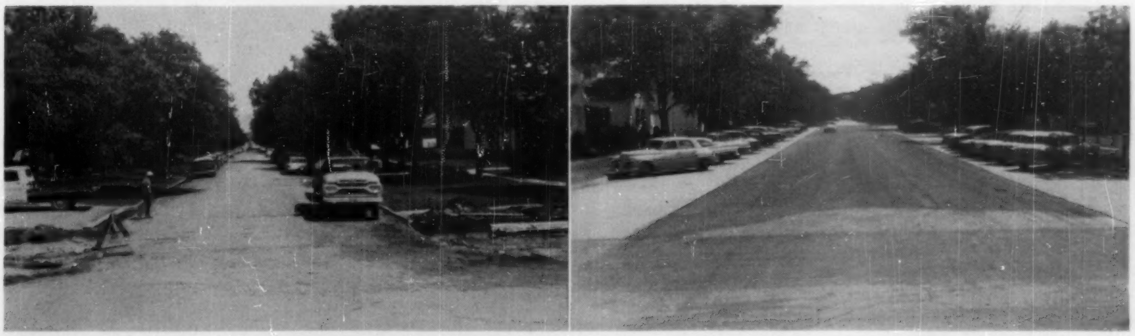
The six-inch base is laid in two lifts, followed by a 1½-inch asphaltic concrete mat. Final work consists of a seal coat or RC-3 or RC-4 applied at the rate of ¼ gallon per square yard and covered with ⅜-inch crushed limestone chips at a rate of 24 pounds for each square yard.

The city participates in the cost of this type program by furnishing the engineering and administration fees and also the crushed limestone used for the base. The work itself is done by contract.

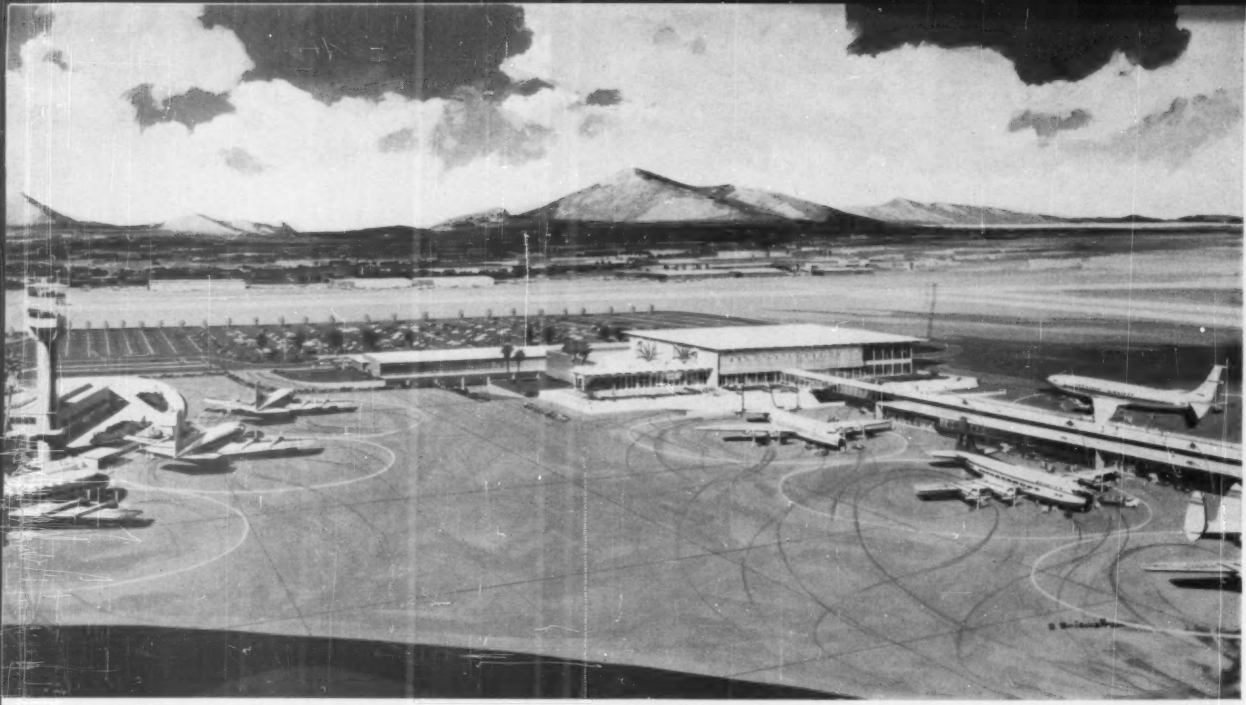
Another method adopted by the city to increase the number of miles of permanent paving is the requirement that all new subdivisions be paved with permanent streets. These contracts are not awarded by the city. However, the engineer hired by the subdivider must submit the street designs to the City Engineer for approval. The Engineer's Office also inspects this construction as well as that awarded by the city. In this way we are gradually upgrading our streets.

The Past Ten Years

A brief review of the past ten years shows that the system is working. The population of Rapid City increased from 25,000 persons in 1950 to 42,000 persons in 1960. Of the 100 and some odd miles of streets existing at the beginning of the last decade, only 32 miles were surfaced with permanent pavement and most of these were the highways through town and the business area streets. The city now has 140 miles of streets and, of these, 103 miles are improved with permanent pavement, with most of the work done in the residential areas during the last five years. ◄◄



The widening program not only provided additional parking space but it also resulted in wider travel lanes as these before and after views show.



The first phase for Phoenix's new jet airport facilities will look like this when completed. At the left is the existing airport building and tower which will be replaced by further construction.

Phoenix Airport Goes Jet

. . . by building new air-terminal facilities, runways and taxiways

In July of this year Phoenix, Ariz., started construction of the first stage of a two-fold plan to provide itself with modern jet air service facilities. Initially the plan calls for a new terminal to augment the existing one until the second stage of development. The control tower and existing terminal will then be converted to a freight and office building.

The first stage of development will provide over 100,000 square feet of usable building space for the airlines and in addition it will provide space for administrative and concessionaire use.

The architects designed the terminal structure of reinforced concrete with a lightweight curtain wall exterior. The major feature of the design will be a post-tensioned single-tee roof structure over the main lobby. Each tee section will be approximately eight feet wide by 144 feet long and will weigh approximately 40 tons per unit. The span will be 84 feet between the beams and cantilever 30 feet beyond at each end. The curtain wall will then be suspended underneath, thus providing for adequate expansion and contraction, as well as ease of remodeling for future growth.

Upon entering a passenger will find the airline ticket facilities directly in front of him. His baggage will be taken from here by conveyor belt directly to the baggage-handling area and thence by baggage cart to the plane. The passenger will find seating in the main lobby and concessions to provide for his needs.

On the north and east sides of the lobby will be a mezzanine to provide office space. At the west end, a garden court will separate the coffee shop and cocktail lounge from the lobby. From the court one may ascend to an observation deck above the cocktail lounge. The entire southern half of the airport will be visible from the lobby. This south facade is to be of glare-reducing glass and will be shaded by a lightweight aluminum screen. Immediately outside will be an open-air terrace for those who wish to have a closer view.

Connecting with the main lobby on the south will be an operations building which will contain the various airline gate positions, a waiting room for each gate and rooms to accommodate flight crews plus airline operations areas.

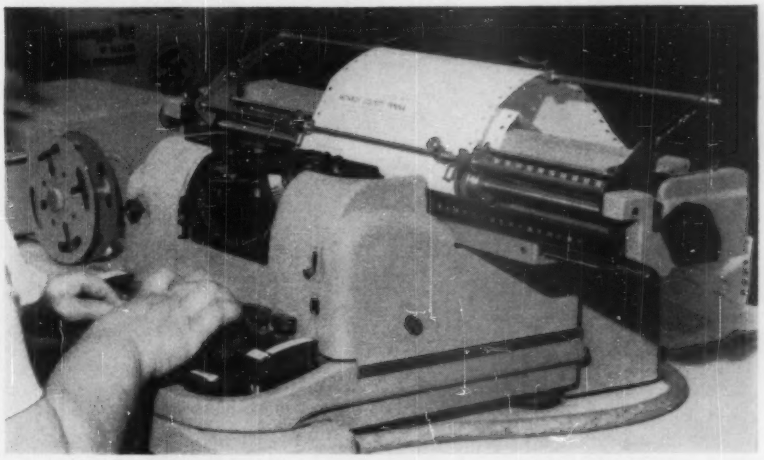
In addition, an automobile parking lot for 1,000 cars will also be constructed to the north of the airline ticket wing building.

The plans are projected for 30 years hence. The first phase of construction with runways, taxiways and aprons and the above mentioned building will be completed late in 1961 or early 1962 and will cost approximately $4,500,000.

Financing has been provided through the sale of airport-revenue bonds and federal-aid funds.

The firm of Johannessen and Girand has acted as the consulting engineer for the development of the airport. The firms of Lescher and Mahoney, Architects and Engineers, Ltd., and Weaver and Drover joined together as the Associated Airport Architects to design the terminal building. Landrum and Brown of Cincinnati, Ohio, have been overall consultants to the city for the development of the airport. ◄◄

Using the information on the appraisal cards of 24,000 properties, a clerk in the County Tax Assessor's office types out assessment change notices on printed Standard Register marginally punched continuous Kant-Slip forms. Simultaneously, a Data-Flo master machine to her left is punching out similar information on a tape.



Keeping the Reassessment Up-to-Date

By **G. K. BRANDS, Sr.**
Chief Assessor
Monroe County
Stroudsburg, Pa.

Since putting modern business machines and forms to work late in 1959, we get out tax notices on 24,000 properties in two months, against six months formerly.

Errors are fewer than when most of the entries were handwritten. It would take ten filing cabinets to store the same tax data now kept on rolls of punched tapes in a single cabinet. The new equipment and forms were installed to handle the results of a county-wide revaluation. Before revaluation, 29 local assessors were assessing by opinion. Now, the assessing is done by appraisal under set formulas and the work is being put out by only seven aides to the chief assessor, including two deputies.

Monroe, as classified by the state, is a seventh-class county with a population of 35,000. Stroudsburg is the county seat. Our four boroughs and 16 townships have a valuation for tax purposes of $64 million. We tax on 35% of full value.

Three commissioners run the county and also make up the Board for the Assessment and Revision of Taxes. They are John R. Lesoine, Willard L. Quick and Stanley B. Rader.

Revaluation, which took the J. L. Jacobs Co., Chicago, a year and a half to complete, became effective in 1959. Property values, as a result, were pegged 1.3 to 3.9% higher than under the old system. The reappraisal also resulted in the county having its first tax map. The Chicago firm supplied us with appraisal cards giving a complete description of each of the 24,000 properties and the map.

In October 1959 a clerk working from the appraisal cards typed out assessment change notices on continuous forms designed and supplied by the Standard Register Co., Dayton 1, Ohio. Sitting at a Data-Flo machine, she typed on each marginally punched Kant-Slip continuous form: the name and address of the property owner; the code according to district, map, block and lot; the assessment on both land and buildings for 1958; and the new assessment. Each notice contained an announcement that property owners could appeal the change in the assessment within thirty days of receipt.

These notices were designed so they could be easily separated by tearing along perforated lines. Each was slipped into a window envelope for mailing to the property owner. Only his name and address, as it appeared on the notice, showed through the envelope window.

Also Punches Tape

While the notices were being typed, the Data-Flo simultaneously punched the same information into paper tapes.

The tape was then run over a reader, which printed the data on blank workbook sheets in the master machine. These sheets, also marginally punched continuous forms, were manually separated along their perforations and bound into book form. They then were

A deputy assessor checks a property record in the VISI-record card file which is the master alphabetical index.

proofread and changes were made directly on the pages in ink.

To print the assessment rolls, also designed by Standard Register, the tape is rerun over the reader. The original is printed on marginally punched forms on the master machine, while three-part carbon-interleaved tax duplicates are printed on a similar "slave" machine. The rolls are set up so the tape which was run to make up the workbook can also be used to create these records.

The clerk checks the automatic operation against her workbook. When a correction has to be made, she stops the tape and manually types in the correction. After bypassing that portion of the tape, the clerk resets the automatic operation. Simultaneously, a second tape is punched with the corrections included.

The old tape is discarded and the new one is filed in the Chief Assessor's office.

Meanwhile, the tax duplicates are separated by a clerk in the Assessor's office. All of the duplicates are turned over to the County Commissioners' office by the Chief Assessor. As the local tax collectors' bonds are approved, the duplicates are given or mailed, whichever is more convenient, to the respective secretaries (school board, borough or township clerks) to prepare the local and school taxes. After the taxes have been computed, all the duplicates are put in the hands of the 29 local collectors to collect the taxes. We keep a complete cross index on both the maps and individual properties. The maps are indexed geographically and alphabetically according to the 29 taxing districts.

The properties are cross-indexed by name, property, district and master alphabetical index kept in VISIrecord cards made by the Western Loose Leaf Co., San Francisco. The cards contain the owner's name, occupation, address and property identification. We have room for 46,000 cards with the ability to expand to 64,000.

Thus, with the new system, the County Assessor keeps the assessment rolls up to date, a job being done by one-third the personnel required under the semi-mechanical method. It is generally agreed a reassessment is worth the expense. But it is only valuable so long as the records are kept up to date.

There's no longer a need to deal with messy ink as we did when we used metal name and address plates and typed the assessments on individual notice forms. And we are getting better utilization of our space, which is always at a premium. ◄◄

Council Votes Displayed on Electronic Board

In Aurora, Colo., council meetings move more smoothly and with greater clarity, now that council members have the advantage of an electronic vote-display board.

The idea was adapted by City Manager Robert O. Wright after seeing a similar device used in a Pennsylvania city. The Aurora vote-display board is a semi-circular device approximately 3½ feet wide at the base, made of plywood and placed on the wall back of the desks of the Council, approximately 12½ feet above them.

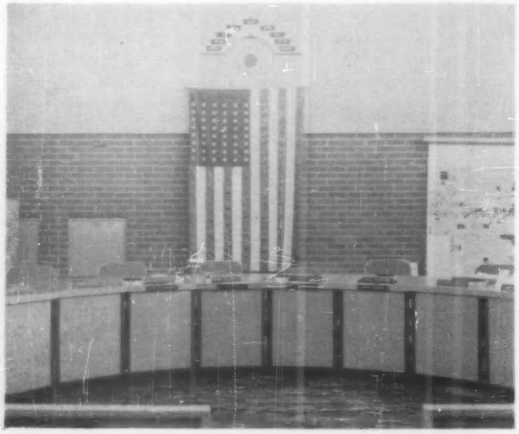
The device contains the names of each councilman in the order in which their desks are arranged. Desks of the Council are also arranged in a semicircle. Beside each name on the board are two small bulbs, one red and the other green, that indicate the voting.

Each councilman votes by a switch located in a convenient place beneath his desk. Movement of the switch "down" activates the red bulb for a "no" vote. Following the motion, second and discussion, the Mayor calls for the question and each member of the Council moves his switch in accordance with his desire to vote. The vote does not show on the board, however, until a master switch is thrown by the Mayor, at which time all votes appear simultaneously.

The mayor, city clerk, and city manager sit with their backs directly to the voting board and see the results in a large mirror in the back of the Council Chambers. This makes it unnecessary for these officials to turn around and glance up at the voting board.

The unusual procedure has interested many visitors, who indicated that they would like to see the procedure used in their own municipalities.

The use of the board has definite advantages. Many times during a roll call vote, it is difficult for the audience, especially if they are seated in the back of the room, always to hear the voice vote. The use of this method permits them to know immediately how each member of Council voted on the question, and the overall result. ◄◄



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The voting board reproduces the seating arrangement of the council members and has a red and a green light beside each name.

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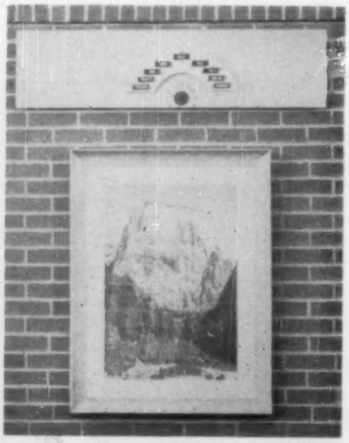
The mirror at the opposite end of the room, above the picture, allows the mayor, the city manager and the clerk to see the voting results without turning around.



FOR FIRE
741
FOR FIRE
731
FOR FIRE
631
FIRE

The new central control panel at Willimantic's fire headquarters is examined by (l. to r.) W. L. Smith, Mayor Bergeron and the author.

More of the Same

The 72-year-old fire alarm telegraph in Willimantic, Conn., has been fully modernized

By **J. LEO RIVARD**
Fire Chief

This community of 19,000 people is the "Thread City of the World." Today it is also among the best-protected against fire.

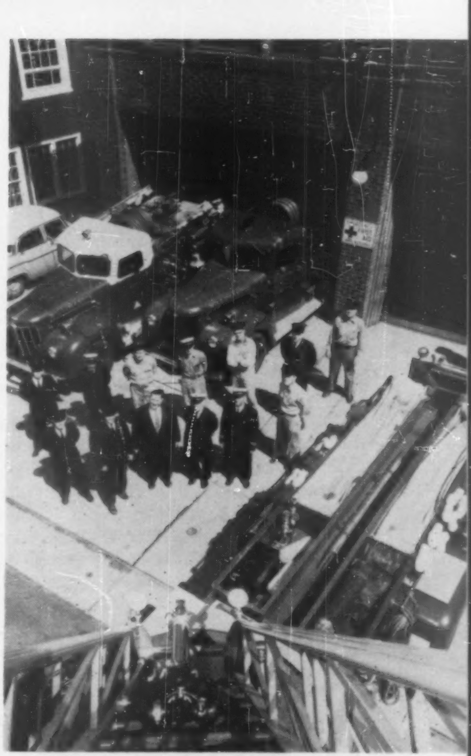
It started in 1887 when a telegraph fire alarm system was installed by the Gamewell Co. Then only eight fire alarm boxes were required to serve the entire city.

By 1954 — 67 years later — there were 53 boxes. There were also some faulty conductors. Time for changes.

Mayor Florimand J. Bergeron, the Fire Commission and I visited neighboring and distant cities and studied fire alarm installations of different types. Prime consideration was given to reliability, speed and accuracy of reporting, cost of installation, and cost of maintenance.

The unanimous decision was to modernize and expand our present system, and to require that all industries and institutions which connect with the municipal system clear their equipment with the Fire Chief's office.

A big factor in the decision was cost of maintenance. The City of Willimantic *owns* the system and therefore can do its own installation and repair work. All such work is ably performed by William L. Smith, Assistant Superintendent of Fire Alarm, who, with only one assistant, not only installs all new wires, cables and boxes for the fire alarm system, but services traffic signals as well—and has time remaining to answer fire calls, conduct fire safety courses, and help



Aerial ladder truck exemplifies up-to-date fire equipment.

supervise school fire drills as well.

When time came to install the modern system, we adopted a four-phase pay-as-you-go program:

1. Completely new central control panel at fire headquarters. This necessitated construction of a second story over the fire station but made possible an almost instantaneous change-over from the old panel to the new, when the installation was complete. It also gave us adequate room for expansion of the system. The new control board was installed by Mr. Smith, who had familiarized himself with all its workings and maintenance.

2. All underground cable replaced, with splices eliminated, so that all testing and repair work could be done at street level.

3. Existing boxes changed to the ground-return type and an increase from 53 to 100.

4. All fire alarm system overhead wires replaced. To date, over 110,000 feet of wire has been installed, as part of a program to finish in 1961. Eleven manufacturing plants, eight public and parochial schools, the city hospital and a home for the aged are already connected to the municipal system through equipment approved by the Fire Department. The Fire Department inspects and maintains all the approved devices without charge.

How Our System Operates

An alarm is sounded—we hope by automatic fire detection and signaling device, or by the citizen's use of a fire alarm box. In our experience, telephone alarms are frequently inaccurate.

This alarm registers automatically on our central control panel, and the coded number begins to sound *within the station.* This is sounded internally twice before the public alarm begins to be heard on air horns. These few seconds give our equipment time to "roll" before the general public is alerted. This lets us have an important jump on traffic.

The amount and type of equipment to be dispatched is pre-determined and kept in a quick-reference card file. Each card is keyed to a fire-box location. In seconds, the correct assignment of forces is on its way. Apparatus consists of three pumping engines and a 75-foot aerial ladder truck, all Maxims. Our manpower consists of 18 regulars and 29 call men. We can reach the most distant location in the city within three minutes after the coded alarm is received at the station. ◄◄

Semi-Low Rent Housing Can Switch to Co-op

New York's first state-aided, low-rent public housing project designed so that it can be easily converted into a middle-income cooperative if future needs so dictate will be in the city of Glen Cove. This will offer rentals at $17.45 per month per room, or about $5.00 per month more than other public housing in the area. If it switches to co-op, the monthly charges will be about $25 per room.

To achieve this flexibility and to permit partial conversion, the New York State Housing Commissioner James W. Gaynor reports that the project will consist of 12 two-story buildings, each containing four dwelling units. Each building will have its own heating plant and water meter and will be set on a clearly defined plot. As a result, the Glen Cove Authority will be able to convert individual buildings into middle-income cooperatives without converting the entire project.

Other design features which would ease the conversion include:

room sizes approximating middle-income standards.

separate gas and electric meters

clothes drying yards

off-street parking facilities for each building.

A precedent for such a change has been set by the recent conversion of the Dante Place project in Buffalo, N. Y., into a middle-income cooperative. Under such a plan, the Glen Cove tenants would form a limited-dividend or limited-profit housing company which would buy or lease the structure from the housing authority. Upon such sale or lease, the state would cease the subsidy for the portion of the project converted. The subsidy for the project will be limited to $29,000.

This flexible arrangement has the strong support of Glen Cove's Mayor Joseph A. Suozzi, and the city's Housing Authority Chairman, Frank X. Hussey, Jr. ◄◄

Wagons for First Aid and Patrol

Four 1960 Dodge station wagons will double as ambulances in replacing four patrol scout cars of the Detroit, Mich., Police Department. It is said that station wagons may eventually be substituted for half the scout cars now in use throughout the city.

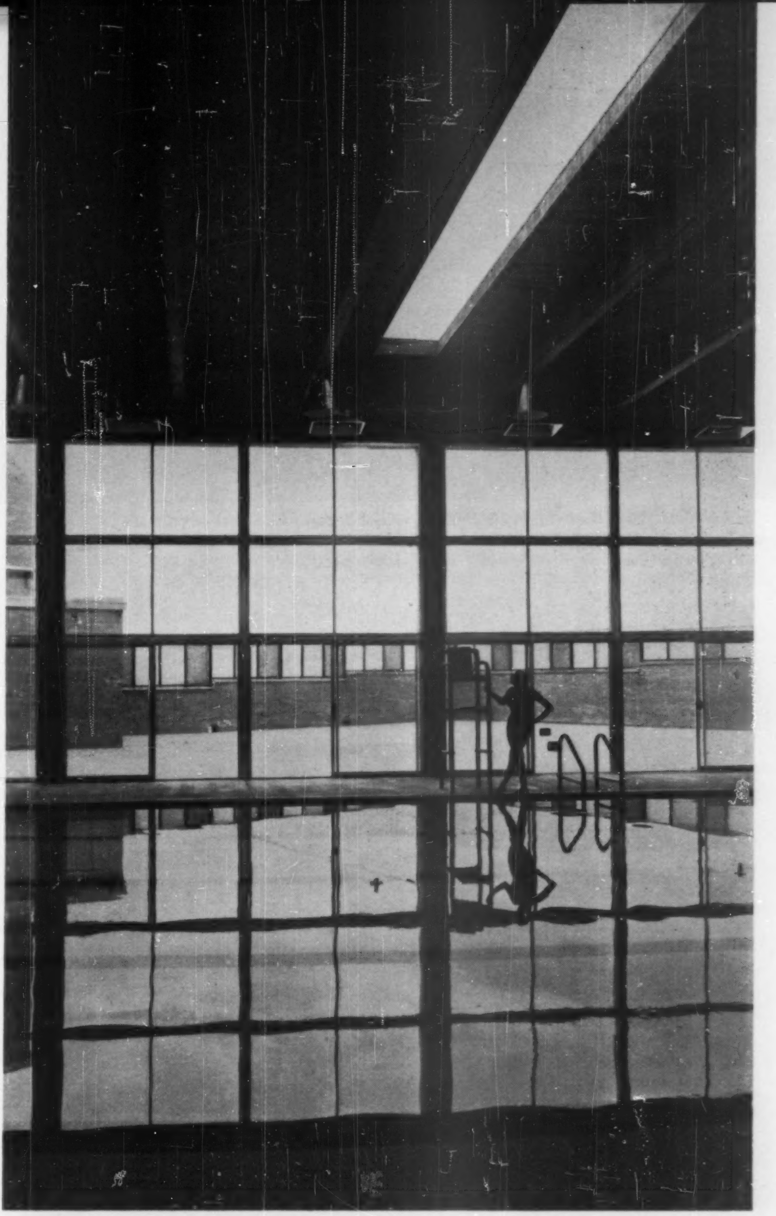
The cars are manned by two police officers who recently completed a refresher course in emergency first aid. The eight-cylinder Seneca wagons carry collapsible cot stretchers for two injured persons at one time. Resusitubes for mouth-to-mouth respiration are also part of the equipment. Each car covers a regular scout-car territory and handles normal police calls as well as emergency runs.

During its study of the use of station wagons, the Police Department questioned major cities throughout the country, and visited several cities using wagons. Police Commissioner Herbert W. Hart reported: "The experience of other cities merited further study by our department. If our pilot study proves successful the use of station wagons will no doubt be expanded." ◄◄

Inspecting the new Dodge station wagons are Superintendent Louis Berg (left) of the Detroit Police Department and Police Commissioner Herbert H. Hart.

Joint City-School Pool

. . . provides better facilities at lower cost for more people



This indoor-outdoor pool was a joint project of the Westminster, Colorado, Recreation District and the School District. Shatterproof, translucent Structoglas fiber-glass skylights and sliding glass doors create the illusion of outdoor swimming the year round.

Westminster, Colo., has shown that when a school board and recreation board combine efforts to build recreational facilities for their community, both get more for the money invested.

The new A. W. Wilson Swimming Pool erected jointly at the Clear Lake Junior High School by the school and recreation boards demonstrates the advantages of these cooperative efforts. The one-story, indoor-outdoor pool designed by Paul R. Reddy, architect, of Denver, is a year-round center of attraction both for youngsters and adults.

In the summer, the sliding doors in a glass window wall that separates the pool area from a large sundeck are opened to create the illusion of swimming out-of-doors. Five Structoglas fiber glass skylights, each 2½ x 70 feet, flood the pool area with diffused sunlight to enhance the out-of-doors effect. No artificial lighting is required except at night. The pool has infra-red heaters that warm the swimmers without warming the air.

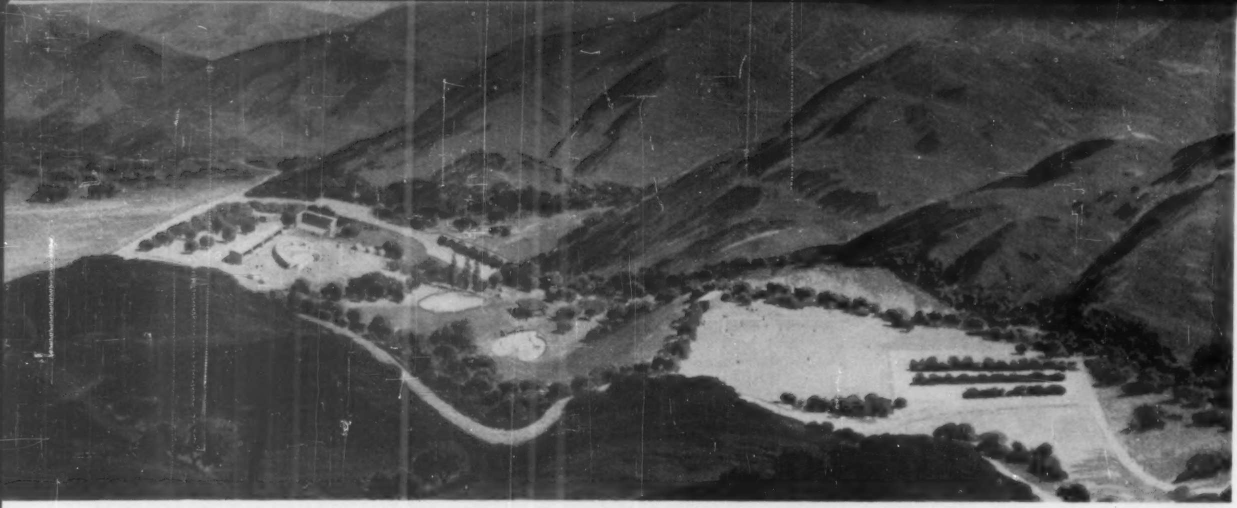
A wading pool will soon be built on the sun deck. A brick wall surrounding the area affords privacy and provides a break from cool mountain breezes. To relieve the severity of the high brick screen, the architect provided window openings at close intervals along the top three feet of the wall. Shatterproof panes in the openings are of the same white translucent fiber glass as those that are used in the skylights.

Citizens within Metropolitan Recreation District No. 50 enjoy daytime and evening swimming in the new pool throughout the year. Costs are lower since school lockers, dressing rooms and toilet facilities can be utilized.

In the winter months youngsters in School District No. 50 enjoy far better indoor-pool facilities than could be provided by the school budget alone. With the glass window walls closed, the children still enjoy "outdoor" swimming.

But the school child's daytime use of the pool is only half of the wintertime story of this facility. The Recreation Board operates it evenings and weekends for both children and adults. Moreover the police department's underwater divers utilize the pool for practice needs.

Kenneth Larkin, the pool engineer, extended the use of economy materials to the pool itself. A white portland-cement plaster finish was used for the pool. Only the pool edges are of tile. The cement plaster requires no painting, and later repairs will be less costly than repairs to tile. A continuous aluminum gutter around the pool serves as a deck drain and overflow. The filter plant was designed to handle water from the pool and the junior wading pool. ◄◄



Stage I of the Scholl Canyon Project will be completed in about six months. Recreational facilities will include a baseball diamond, play areas, overnight camping and picnic areas.

Glendale, Calif., initiates a cooperative refuse-disposal arrangement that results in . . .

A Package-Deal Refuse Program

By **C. E. PERKINS**
City Manager

An unusual cooperative arrangement initiated by the City of Glendale has produced a low-cost refuse disposal site for the city and its neighbors and is making possible the development of a major regional park.

The project itself involves no drastic departures from time-tested methods; a huge canyon within our city limits affords an ideal location for a sanitary-landfill operation, with the land so developed dedicated to park purposes. This single project in large measure solves two seemingly unrelated problems that face nearly every city—the need for a low-cost refuse disposal method and the need for additional park facilities.

Several aspects of the project are unusual and should be of interest to other cities. The most important and most unique feature is the extraordinary degree of interjurisdictional cooperation involved in solving these area-wide problems by this method.

The most pressing problem grew out of a staggering increase in the amount of refuse collected — over 400% since the city instituted city-wide collection in 1952. This increased volume overloaded the available disposal facilities and required that some new method or landfill site—hopefully a less expensive one—be developed.

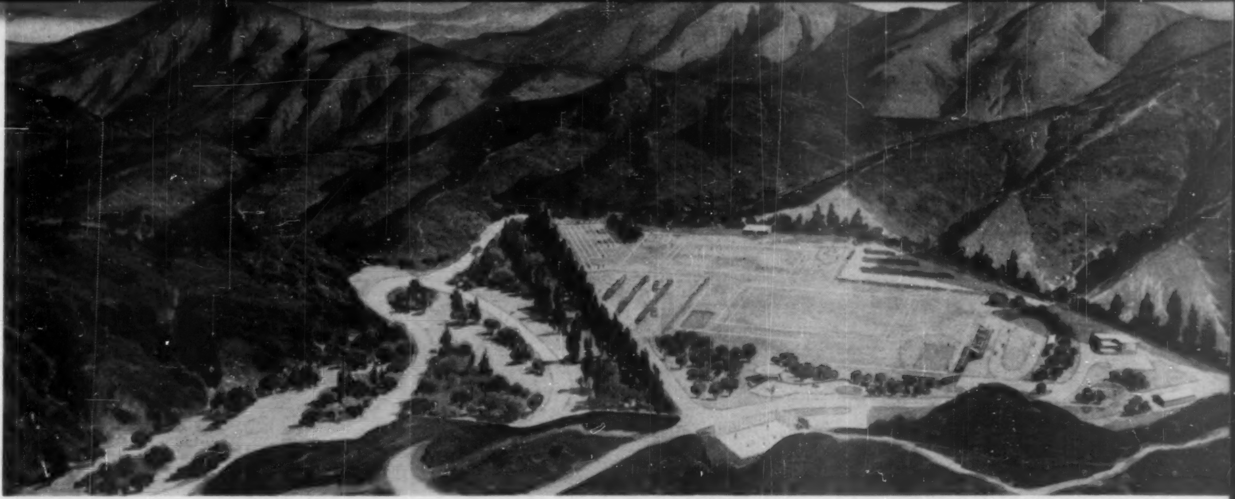
The other facet of the problem—shortage of land for needed expansion of park facilities—relates to the fact that Glendale is almost completely developed, with virtually the only undeveloped land being hilly or mountainous terrain unsuited for park purposes. As the community continues to grow (primarily through vertical expansion in multiple-dwelling units and development of hillside lots) and the increasing leisure of its population creates a demand for more parks and recreation programs, the city faces the necessity of purchasing and redeveloping land already in use for other purposes. The only alternative to this unrealistically expensive process is to actually develop new level land for park purposes. This becomes possible when coupled with the landfill method of refuse disposal.

This solution was simple enough—given the site—but administrative officials recognized from the outset that any such project would meet stiff opposition from some quarters and that planning and presenting the project would therefore have to be extremely well organized.

The Approach

Once we had located a tentative site, engineers from Glendale, Los Angeles County, and the County Sanitaion Districts studied the feasibility of the project from the engineering standpoint, including canyon capacity, flood control and fire prevention problems, methods of operation, and other aspects. The area selected was in Scholl Canyon, located within our city limits, only minutes from the central business district and separated from one of Glendale's finest residential areas by a mountain ridge.

Based on the findings of the engineering studies, we made a comprehensive economic analysis, including the cost of operating the disposal project, equipment, and the cost of the recreational facilities which would be installed on the filled land. We then related cost data to total canyon volume in order to arrive at a proposed rate structure for the disposal charges.



This artist's sketch shows Stage II, scheduled for completion in less than three years. Located at a slightly higher elevation than Stage I, the area will provide space for softball and baseball fields, for football, archery, tennis, flycasting and other recreational activities.

Finally, we developed a tentative four-stage plan for recreational facilities and our staff artists and draftsmen translated the plans into large colored renderings.

Presentation of the project to the City Council for consideration did not follow the routine manner. In order to establish the magnitude and significance of the project, we dramatized the presentation somewhat by the use of the large colored renderings, colored slides and other visual aids. Because the project would require action by the Planning Commission, the Board of Zoning Adjustments, and the Parks and Recreation Commission, the City Council invited members of these official bodies as well as the press to join in the special meeting. The City Manager, Assistant City Manager, Director of Public Works, Superintendent of Parks and Recreation, and representatives from Los Angeles County and the County Sanitation Districts described the concept of the project for the official bodies concerned. Following the presentation and discussion, Council directed that each of the official bodies study the proposal from its respective viewpoint and make recommendations as to a course of action.

We then held public hearings over a period of several months, at which property owners of the nearby residential area made concentrated efforts to kill the project, fearful of the potential fire, flood, health, and traffic hazards they envisioned. Actually, their fears, based on their concept of the old-time smouldering dump, were groundless, because of stringent restrictions integrated into the city's conditional use permit and the joint powers agreement developed in cooperation with the office of the County Chief Administrative Officer.

Join Powers Agreement

This agreement, which virtually guarantees a scientifically conducted, noiseless, hazardless operation, was subsequently approved by the Glendale City Council, Los Angeles County Board of Supervisors and the Board of Directors of the County Sanitation Districts. Approval of each of these official bodies was necessary because the terms of the joint powers agreement provide that Glendale furnish the land for the landfill operation; the county provide funds for construction of the access road, storm drains and other facilities; and the county sanitation districts be responsible for actual conduct of the landfill operation. On completion of each landfill stage, the property reverts to the City of Glendale for construction of park facilities, to be financed from dumping royalties.

In addition to the delays and problems generated by the series of public hearings, another problem developed regarding the access road. In order to avoid use of residential streets for heavy truck traffic, construction of a 1.7-mile access road was necessary, beginning at the state highway and entering the project at the high end of the canyon.

Preliminary preparations and negotiations for the access road involved several stumbling blocks, largely because property needed for the road was under the ownership and jurisdiction of a number of different persons, utilities and governmental agencies.

The landfill phase of the project involves the filling of a canyon of over 30 million cubic yards capacity to an extreme depth of as much as 430 feet. We plan to utilize modern landfill methods employing cells of refuse four feet deep covered by one foot of earth. This available volume will provide low-cost refuse disposal facilities for 700,000 to 800,000 persons in the area for 15 to 17 years. Water lines and flood control facilities designed into the project insure safety, and a six-foot chain-link fence around the project will prevent trespassing and eliminate any possibility of refuse straying from the site. Equipment to be used includes:

1. Three crawler tractors of 155 to 268 drawbar horsepower (two with "U" dozer blades and one with a ripper).

2. One 3,000-gallon-capacity water tank truck, equipped for brush fire fighting and for road and landfill sprinkling.

3. One pick-up truck.

4. One 18-yard capacity towed scraper (carry-all).

5. One motor grader, 100 bhp, 22,000 lbs. gross weight.

These items of equipment are based upon an estimated operating level of more than 700 tons daily; we anticipate that within three to four years the tonnage may be considerably in excess of 1,000 tons a day.

Plans call for work on the landfill to proceed in four stages, with park facilities being installed upon completion of each stage of the fill. Stage I requires only six months to fill, while Stage II (the site of the sports area) requires slightly over two years. Stage III (the first nine holes of the golf course, plus clubhouse, driving range, and related facilities) will be completed in four years and Stage IV, the final nine holes of the golf course, will require ten years to fill.

Economic Aspects

Economically, the project is a "gold-mine" to Glendale, the county, and the residents of the entire region. First, it permits major savings by shortening the distance refuse must be hauled to the disposal site. It also reduces the cost of dumping fees, which are generally higher in the private dumps now used. These savings will amount to $2,075,190 for Glendale alone, with proportionate savings being realized by other nearby cities and unincorporated areas. In addition, conservative estimates place the value of the land which is to be reclaimed at $1,962,000.

This represents a tangible asset for Glendale, since the land is under Glendale's ownership, and it is also an economic asset to the people of the entire area, because the reclaimed land is dedicated for use as a major regional park which will be available for the enjoyment of people throughout the area.

A third economic benefit to accrue from the project comes in the form of royalties from dumping fees. The $1.25-per-ton fee established not only will offset operating costs and return the cost of capital investment, but also provides a 25-cents-per-ton royalty pledged to park construction. These royalties will amount to over $2,000,000 during the life of the project, an amount sufficient to install all contemplated park improvements. This is one of the most important aspects of the whole arrangement. Few cities have adequate reserves to build such major park facilities and, unless the park development funds and plans are tied in directly to the project, delay at best and possibly abandonment of park construction plans is likely to result.

The Scholl Canyon Land Reclamation and Park Development Project is therefore a "package deal," with stage-by-stage construction of park facilities insured, financed from the income of the land reclamation project itself.

Another important economic consideration is that upon completion of this project, income to the county will be sufficient to permit commencement of other similar projects elsewhere, thus making possible continuation of this program of reclaiming unusable land and erecting parks on the filled sites.

City Control

Through the provisions of the joint powers agreement and a conditional use permit, the City of Glendale exercises firm control over the character of the project. These provisions were worked out so as to be acceptable to all parties to the agreement and to protect fully the residents in areas adjacent to the project site. For example, regulations provide for adequate fire and flood protection and strictly regulate working hours. Also we have ruled out salvage activities and the use of residential streets to haul refuse to the site. Heavy-duty mufflers and silencers on all equipment regulate exhaust noises and fencing confines any loose papers and debris to the site. There is also a requirement that each day's deposit of refuse must be completely covered with earth before the day's work ends.

These and other restrictions and safeguards insure that the project will be carried on without health or safety menace, noise, unsightliness, nuisances, or other hazards.

Although there were many problems to be solved on this project (in fact, well over three years will have elapsed between conception of the project and the beginning of its period of usefulness), its most significant characteristic is the high degree of cooperation among jurisdictions necessary to bring it to a successful conclusion. This obviously required a spirit of unity and determined effort by the legislative and administrative officials of all jurisdictions concerned. The County of Los Angeles, County Sanitation District, Cities of Los Angeles, Pasadena, South Pasadena, San Marino, Glendale, and other jurisdictions joined forces in making this project a reality. This, then, was a demonstration of intergovernmental cooperation at its best, aimed at solving a common problem of a growing metropolis. County, city, and special district joined together to solve collectively a problem which none of them could have solved individually. ◄◄

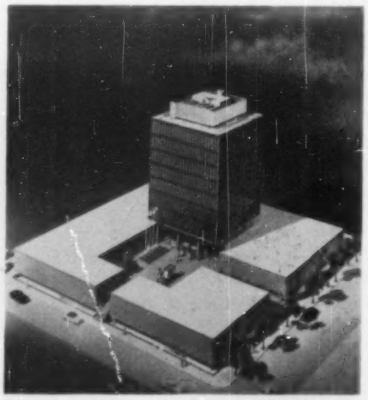
Stainless Steel City Hall

The new $3,500,000 Canton, Ohio, city hall will be one of the first municipal buildings to feature the metal so extensively. Approximately 25 tons of stainless steel will be used for the eight-story building. Occupancy of the new city hall is scheduled for March 1961.

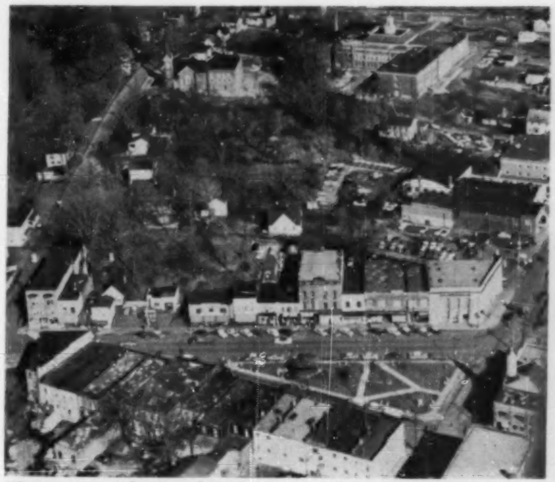
The city hall will consist of two base buildings surrounding an inner open court. Above this will rise a 116-foot tower section with glass and graphite-colored spandrel glass divided into rectilinear patterns by mullions and column sheathing of stainless.

The outer walls of the base buildings will be faced with brick and the inner walls, facing the court, stainless curtain wall.

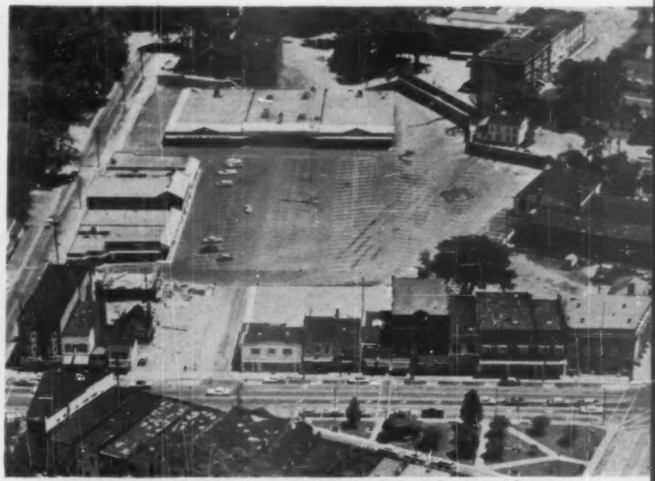
Of the two base buildings, one will hold the judicial branch of the city government; the other will house law enforcement at the street level and the legislative branch, including the city council, immediately above. The office tower will provide quarters for the local government's executive branch. A mechanical floor will be located at the tower's base; a cooling tower, plus elevator machinery, window washing equipment and a police radio transmitter, will be on the roof. The building design uses Republic's Steel Enduro type 302. ◄◄



The model shows the two base buildings surrounding the inner Memorial Court and the tower, consisting of glass and stainless steel.



This scattered, non-descript and inconvenient downtown area of Chagrin Falls . . .



. . . became orderly, convenient and bustling without destroying the community's inherent charm.

Planning Helped Save a Downtown

. . . and kept Chagrin Falls, from being "shopping centered" out of economic existence

By **KENNETH R. CRANDALL,** Senior Planner
Regional Planning Commission, Cleveland, Ohio

Chagrin Falls is a little community of about 3,400 in the suburban Cleveland area. It is an old trading center, serving chiefly as a farm center as far back as the early 1800's, when the first mill was built. Today that farmland has fallen before the outward march of metropolitan Cleveland, repeating a pattern that seems to be happening all over the nation and the world.

While the old Chagrin Falls business district kept pace with the expanding growth around it in terms of increased sales, fresh new shopping centers kept cropping up around it, with all the strong drawing power that good salesmanship can build into them.

Since this village lies in Cuyahoga County and is a participant in the county regional planning commission, village officials appealed to the Commission for help. The Commission's staff prepared a comprehensive plan, one third of the cost of which was paid by the local Chamber of Commerce. Worth mentioning here is the fact that the village has the dubious honor of possessing the highest tax rate in the county and local officials felt that a plan might help lower these taxes or at least get greater service from them.

While the staff began with a minimum of necessary preliminary work, some local people urged rezoning land for industry, feeling that this would help lower the tax burden. Our planners felt that only a limited amount should be made available for industry and, because of its relatively poor location, together with the high tax rate, we thought that substantial industrial operations could not be attracted there.

Having collected and analyzed material from the county-wide "suburban business centers" study, we had reason to believe that Chagrin's business district, once a trading center for several square miles, could be in severe trouble by 1970 unless steps were taken to modernize stores, add more off-street parking, and promote development of about 90,000 square feet of new store area. We advised that while the trading area probably would be reduced, the actual number of supporting families would increase as adjacent communities were developed, if corrective measures were taken.

Soon after, developers submitted two proposals to rezone two areas to permit construction of new stores. At the same time, a new center was being planned just east of the village corporation line. Our planners felt that both proposals within the village were so located as to compete with rather than complement existing businesses. We recommended that a site adjacent to the present stores be cleared and redeveloped. This resulted in a general plan for the entire business district being prepared and approved.

Since opening the new stores last fall, rebuilding two adjacent business structures has begun and plans are under way for extensive remodeling of others. In less than two years, the village and its Chamber of Commerce did much to regain their lost vitality. ◄◄

What Synthetic Detergents Really Do

. . . to water purification processes and how to correct problems that they may cause

By **E. G. PAULSON***

First, what is a detergent? In general, it is any cleansing agent, as water or soap. However, popular usage associates the term "detergent" with a packaged synthetic material used in households as a cleansing agent. These contain:

- **a surface-active material**
- **a "builder"**
- **additives**

When water and sewage plant personnel refer to detergents, they really are referring only to the first portion, *surface-active material.* The most common of these is the anionic material, alkyl benzene sulfonate (ABS). The second portion, *"builders"* are generally complex phosphates; the third, *additives,* are materials such as silicates and perfume. In general, packaged household detergents contain approximately 15% to 35% surface-active material and 35% to 50% builders.

Terminology

To avoid misconceptions, rather than using the term "detergent" we will use the technical terminology "alkyl benzene sulfonate (ABS)" when discussing the surface-active material, and "phosphates" when discussing the other major constituent in the packaged product.

The packaged detergent, after being used in the household, generally is discharged to a sewage purification plant. The effect of conventional treatment facilities on the ABS concentration in sanitary wastes naturally depends on the degree of treatment. A representa-

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Foaming, although often caused by the presence of ABS, may be aggravated by other ingredients in the water.

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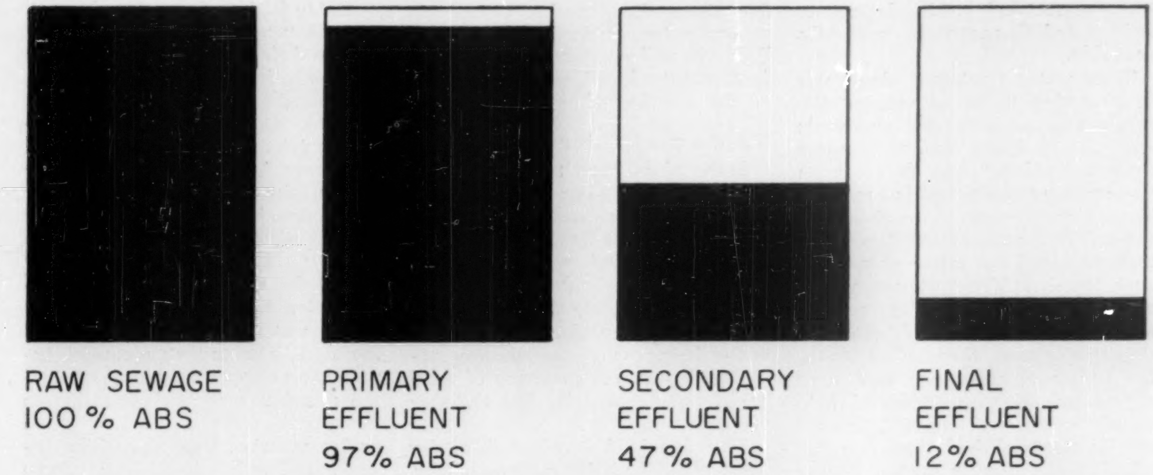
* Mr. Paulson is manager, Process and Waste Water Engineering, Hall Laboratories, Division of Hagan Chemicals and Controls, Inc., Pittsburgh, Pa.



Surface active materials can be removed from solution; the amount of removal depends on the degree of treatment.

tive sewage treatment plant may produce the following results:

	mg/litre
Influent to Plant	**10**
Primary Effluent	**9.7**
Activated Sludge Effluent (4 hours retention)	**4.85**

These data are based on studies using radioactive tracer material.[1] Treatment plant results vary and range from 50% to 60% reduction of influent ABS content. Incidentally, forced aeration of the activated sludge effluent and removal of the produced foam by skimming could be used to produce an effluent containing approximately 1.2 mg/1 of ABS, thus increasing the over-all removal of 88% of the influent concentration. The final effluent is then greatly diluted by the receiving body of water, so that the end concentration in a stream is very low. For example, in Cincinnati, the average ABS concentration over a five-year period has been 0.16 mg/1 with no tendency to increase.[2]

In late 1956 and early 1957, Chanute, Kans., found it necessary to recirculate its purified sewage-plant effluent through its water treatment plant to overcome an extreme shortage of drinking water.[3] Concentrations of constituents under these conditions reached levels much higher than normal. During this period, the USPHS conducted extensive studies to determine the ABS and phosphate concentrations at various points in the system. These disclosed results to be expected under practically the worst forseeable situation. The table on page 94 summarizes these data.

The sewage treatment facilities provided secondary treatment by the use of trickling filters. The water treatment plant consisted of a plain sedimentation basin; a solids-contact softening unit using alum, lime, soda ash, and chlorine; a final settling basin; recarbonation; and rapid sand filters. Chlorine was added just before and after filtration. In addition, during this period of recirculation the city built a temporary dam to hold the sewage plant effluent for an average retention time of 17 days.

During this period, the increased phosphate and ABS concentrations caused no special problems in the operation of the sewage treatment plant. However, the water treatment plant lost efficiency in the coagulation and settling basins. This could have been caused by the general quality of the recycled water, and possible the dispersive action resulting from the organic concentrations, rather than the reported complex phosphate concentration.

Bacterial Conditions

Representatives of the United States Public Health Service and the Kansas State Board of Health closely followed the bacterial condition of the drinking water standards for bacteriological quality during the entire period. Special biological tests did not reveal the presence of pathogenic organisms. Moreover, there were no known cases of water-borne disease or other adverse effects on health resulting from the use of the recirculated water.*

Water treatment personnel sometimes associate "detergents" with some of their operating problems. This is based partially on known properties of surface-active materials and partially on analytically determined anionic detergent concentrations. One must exercise caution, however, in evaluating analytical results. Most investigators determine concentrations of surface-active materials by using the methylene blue procedure; this test is susceptible to misleading results due to the presence of interfering ions. This appears to be particularly true when ABS passes through sewage purification facilities. Analytical procedures have been developed to assist in a better definition of ABS and phosphate concentrations.[4,5]

When a plant is having difficulty, laboratory technicians collect more complete analytical data. Since we associate materials such as ABS with foaming, their presence provides a ready answer to operating difficulties. Actually they may be only one of many factors involved. We believe that collection of routine data on the ABS and phosphate concentrations at water treatment plants would provide realistic information on the concentrations of these materials which have no effect on operations.

Let's consider some of the problems asssociated with detergents and remedial measures presently available.

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* EDITOR'S NOTE: The water was colored and unpalatable, and the market for imported bottle water was brisk.

Some water treatment plants use flash mixing tanks for mixing the coagulating or softening chemicals with the incoming water. In some cases a head of foam develops on these mixing tanks, and is generally blamed on detergents. In almost all cases, the measured ABS concentrations could *not* cause or support such foaming. The vortex may create part of the difficulty, causing excessive aeration of the water. If this is the case, then relocation of the mixer or insurance that it is submerged more fully would help in solving the problem. If this cannot be accomplished then one can install spray nozzles on the mixing tank. The pressure sprays hold the produced foam to a determined level and prevent uncontrolled conditions.

Coagulation

Some attribute difficulty in clarifying water by coagulation to "detergents;" laboratory studies give some confirmation. Doses many times greater than those found in treatment plants indicate that complex phosphates in the "builders" may cause some difficulty in the coagulation process.[5] The magnitude of the interference depends on coagulant dosage, flocculation characteristics and sedimentation time. Also, the softer the water, the more prevalent is the interference from the complex phosphate ion.

This interference can be compensated by increased coagulant dosage. As a general rule, considering the normally encountered concentrations of complex phosphates in the influent to a water treatment plant, this increased coagulant dosage represents only a slight increase in the amount of coagulant being used. For example, if the coagulant dose is increased by an amount equivalent to two to five times the complex phosphate concentration, expressed as mg/1 P_2O_5, it will overcome any interference introduced by the presence of the complex phosphates.

Taste and Odor

Some plant reports associate an oily and fishy taste in the water with the presence of detergents. Studies conducted to determine the level required before ABS could be detected do not substantiate this.[8] The results indicate that levels considerably higher than those presently being encountered are required before the presence of ABS could be detected by the taste or the odor.

The threshold level of ABS for taste and odor is 50 mg/1 or higher. Actually, these high concentrations do not produce an oily or fishy taste; ABS was detected only by a sensation in the mouth. The presence of ABS may indicate that the water is being contaminated. Taste and odor problems are probably caused by other contaminants.

One reason for associating detergents with the aforementioned operational problems is that the operator does not know what action to take to remove ABS. These materials *can* be removed from solution. Under emergency conditions, such as the Chanute, Kans., incident, ABS removal may very well be desirable.

However, concentrations of ABS generally encountered to date have not been great enough to make removal necessary. Nevertheless, adsorption on activated carbon is the most applicable method for removing ABS.

Laboratory studies indicate that the removal efficiency depends upon the initial ABS concentration, the degree of removal required, the type of activated carbon used and the pH.[9] Generally speaking, at a pH of 5 the efficiency of ABS absorption by activated carbon is appreciably higher than at a pH of 8. Various types of activated carbons require different dosages to produce the same final ABS concentration. For example, with one type between 5 to 10 mg/1 must be applied to reduce 1.0 mg/1 down to 0.5 mg/1, and above 40 mg/1 must be used to reduce the concentration to 0.1 mg/1. Another type of carbon may require about 50 mg/1 to reduce 1.0 mg/1 down to 0.5 mg/1, and around 100 mg/1 to reduce the concentration to 0.1 mg/1.

The water-works profession and the detergent industry cannot ignore the presence of detergents and the possibility of problems due to increased concentrations. When problems arise, they should be investigated and defined. This course of action will result in the term "detergent" producing a uniform mental picture for all. True causes and solutions can then be developed. No potential or pressing problem has ever been truly resolved by either the formation of preconceived conclusions or ignoring its existence. ◄◄

SUMMARY OF DATA FROM USPHS STUDIES
Chanute, Kansas

	ABS (mg/1)	Phosphates as PO_4 (mg/1) Ortho	Complex	Total
Raw Sewage	13.6	22	19	41
Treated Sewage	10.4	22	7	29
Reduction, %	25		67	29
Raw Water	4.6	12	1	13
Treated Water	4.4	3.4	0.5	3.9
Over-All Reduction, %	68	88	97	95

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NOBIL SHOES
KIRBY'S
Florsheim shoes
WOOLWORTH'S

Kalamazoo's permanent pedestrian mall.

Merchant Views on Kalamazoo's Shopping Mall

Has the 1,184-foot-long mall in Kalamazoo, Mich., proved an effective competitor of outlying and suburban shopping centers? Has it revitalized the heart of Kalamazoo?

The answers to these questions largely depend on whom you ask. Though there's little agreement as to its total effects, on one point most merchants do concur: For better or worse, the mall has separated the shopper from his automobile — and has left them some distance apart. And this, together with insufficient parking adjacent to the mall, has created problems and caused grumblings.

Of the some 60 retail stores fronting the mall, only Montgomery Ward & Co. sells appliances and radio-TV products. And reports persist that this branch of the huge chain aims to relocate itself not only far from the mall but specifically because of it.

Cassidy O'Brien, appliance-TV department manager of Ward's, cites the scarcity of convenient parking space as the chief deterrent to getting the man of the house to visit downtown.

Charles Brown of C. H. Brown & Son, appliance store located one block from the mall, offers a more enthusiastic opinion. "The mall seems to have generated increased activity and has proven an attention-getter and has brought many people from other cities to observe it. In the long run, I believe our business will gain, and certainly Kalamazoo as a whole will benefit."

B. J. Green, of Green's Radio Sales & Service, situated in a neighboring shopping area, points out: "I fought the mall because of its cost to the public. The merchants should be taxed for this and not the public. The mall has brought Kalamazoo a lot of publicity. In that sense it is a good thing for the city but not everyone should have to pay for something that benefits directly only certain merchants."*

Henry Schippers, Schippers Service Appliance Co., about three blocks from the mall: "I don't believe the mall has had any effect on our business but it will draw more people downtown, and I have been told that the business of downtown merchants is up 11%."

Jim Adams, Consumers Power Co., local utility on the fringe of downtown, likes the mall: "We find that people spend more time shopping since its establishment. This is good."

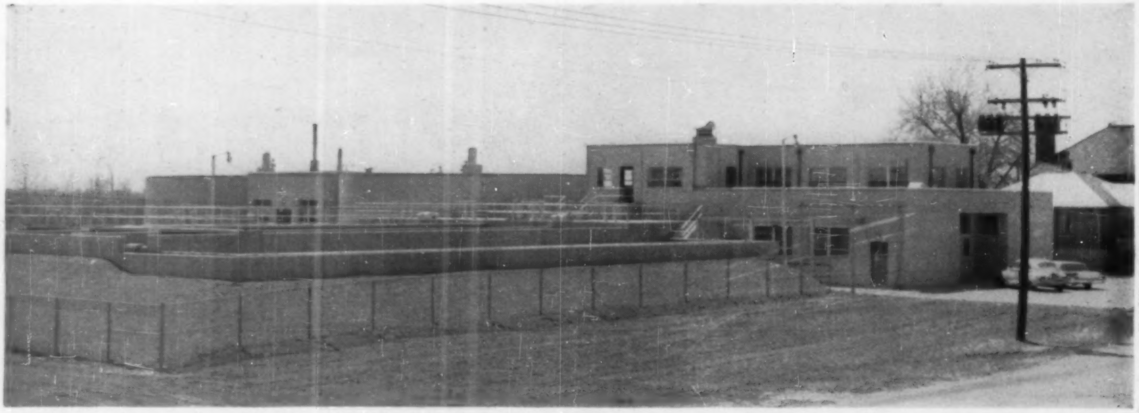
S. Seibert, Kalamazoo Maytag Co., located about two blocks from the mall on Burdick Street: "The mall brings people downtown. We have noticed that we are getting more business than ever before, from people who live in small outlying towns."

Henry Meyer, Meyer Music Store, two blocks from the mall: "We have had more traffic since the mall was opened."

Whether the presence of the new mall in downtown Kalamazoo will halt what might be a movement on the part of merchants to outlying areas is a question that only time will answer. ◄◄

This article is taken from a survey by MART, the magazine of appliance, radio, TV, housewares dealers in its September 1960 issue.

* Construction of the three-block mall is estimated to have cost $80,000, such cost being divided evenly between property owners fronting the mall and city taxpayers through the Kalamazoo general fund.



This overall view, taken from the top of the Wabash River flood protection levee, shows the compactness of the plant.

For a Cleaner Wabash River

Vincennes, Ind., dedicates a sewage treatment plant and joins the list of cities helping to abate stream pollution

By **WILLIAM D. FRISZ**
Superintendent
Sewage Treatment

Vincennes' primary sewage treatment plant is the first in the city's history. It replaces a pumping station that pumped raw sewage into the Wabash River when the river level became high enough to prevent gravity flow.

Designed by Henry B. Steeg & Associates, Inc., consulting engineers of Indianapolis, Ind., the plant cost approximately $895,000, of which $250,000 was borne by the federal government under Public Law 660. The city invested another $230,000 for the necessary sewer construction.

The plant should take care of our needs for some time, for it is designed to serve a population of 40,000 and our present population is only 18,000 persons. Design flow is 4.0 mgd in dry weather and 10.0 mgd in wet weather. Present flows average about 2.53 mgd. The BOD loading is based on 202 ppm of 6,700 pounds a day with a suspended solids loading of 256 ppm or 8,500 pounds a day.

Because of the high storm-water flow, we have two sets of pumps—raw-sewage and storm-water. Under normal dry-weather flows, the raw sewage enters the plant wet well by means of two 30-inch-diameter sewers that terminate in a junction box which in turn is connected to the wet well by a four-foot-square conduit. This conduit contains an Armco motorized sluice gate and a manually cleaned bar screen.

Three Chicago Pump Company pumps, driven by Marathon electric motors, lift the raw sewage. It then flows by gravity through two Chicago Pump comminutors into the Dorr Detritor where grit is removed. This is an 18-foot-diameter unit having a normal capacity of 12.9 mgd. Between the Detritor and the primary tanks, flow is measured by a Parshall flume equipped with a Penn Instruments Division of Burgess-Manning Co. automatic recorder.

Two of the raw sewage pumps are two-speed units, rated at 1,500 gpm and 3,600 gpm when rotating at 595 rpm and 710 rpm respectively. The third unit has a rating of 900 gpm.

During wet-weather flow, when water enters the wet well faster than it can be pumped out by the raw-sewage pumps, three storm water units also go into service. These are 10-inch Aurora pumps each rated at 6,500 gpm at 29-foot head and driven by 75-hp Marathon electric motors. These pumps discharge directly into the plant outfall line.

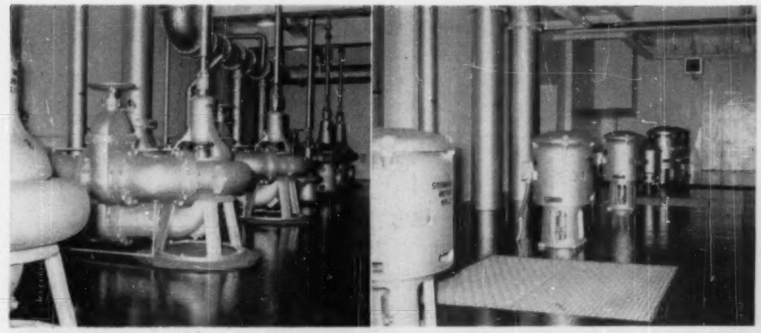
Both the raw-sewage and storm-water pumps are controlled by a single Healy-Ruff float control unit.

Primary Treatment

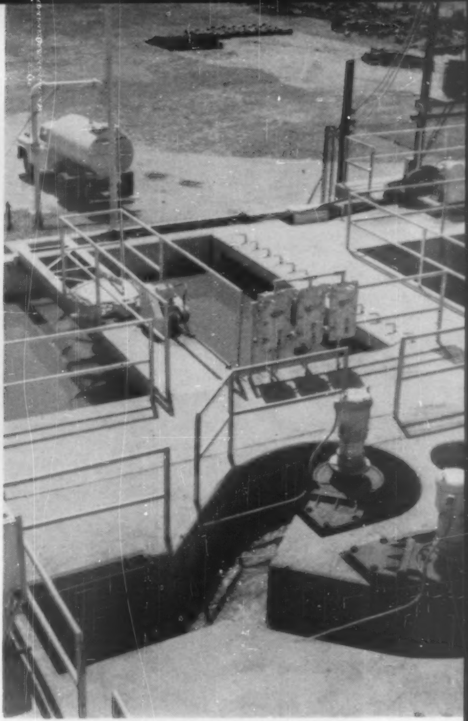
The four settling tanks are each 104 feet long and 16 feet wide with an average water depth of 12 feet. The surface settling rate at design flow is 600 gallons per square foot per day. The total weir length of 480 feet provides an overflow rate at design flow of 8,350 gallons per day per foot of weir. Mechanical equipment consists of standard Chain Belt Company sludge and scum collectors.

Following sedimentation, the flow passes through a single chlorine contact basin 104 feet long and 16½ feet wide with an average water depth of 9¼ feet. This tank provides a 20-minute detention time at design dry-weather flow. Facilities include one 750-pound-per-day Wallace & Tiernan chlorinator. We use ton containers.

Following chlorination, the ef-



Cleanliness is the word in the Vincennes sewage treatment plant as can be seen by these views of the raw sewage and storm-water pump room (left) and the pump motor room (right).



Before entering the settling tanks all large particles are ground up by comminutors and the grit removed in the grit chamber.

fluent discharges to the Wabash River located several hundred feet from the plant.

Our two circular digesters, heated by means of a Pacific Flush Tank external heat exchanger, are equipped with 55-foot-diameter Carter floating covers. These digesters have a net capacity of 85,000 cubic feet, or two cubic feet per capita based upon a design-population solids equivalent of 42,500 persons.

Sludge-pumping eqquipment includes two Scru-Peller units powered by U. S. Varidrive motors ranging from 475 rpm to 950 rpm to pump sludge from the sludge well at the settling tanks to the primary digester and one pump for recirculation of the digester contents through the heat exchanger. All are Chicago pumps. A Carter duplex pump is available for transfer of sludge from primary to secondary digester as required. DeZurik plug valves were used throughout the sludge piping system. Clow fittings, Eddy gate valves and Iowa check valves were used throughout the rest of the plant.

Sludge-disposal facilities consist of two drying beds, each 100 feet by 200 feet in size, plus a two-ton GMC truck fitted with a 1,500 gallon tank. The duplex sludge pump may also be used to transfer digested sludge to the drying beds or to fill the tank truck by means of a special loading arrangement. The truck is equipped with a spray bar and to date we have used it to spread the digested sludge over the plant grounds to condition the soil and promote lawn growth.

Rockwell special gas meters record gas production in each of the digesters.

Basic plant controls are mounted in a Continental Electric Equipment Company control panel located on the balcony overlooking the pump motor floor.

Five men in addition to the superintendent operate the plant. This force is made up of four operators and includes one maintenance man.

The maintenance man is responsible for checking two lift stations within the city. Each of these stations contains two four-inch pumps that operate automatically as required.

Construction Problem

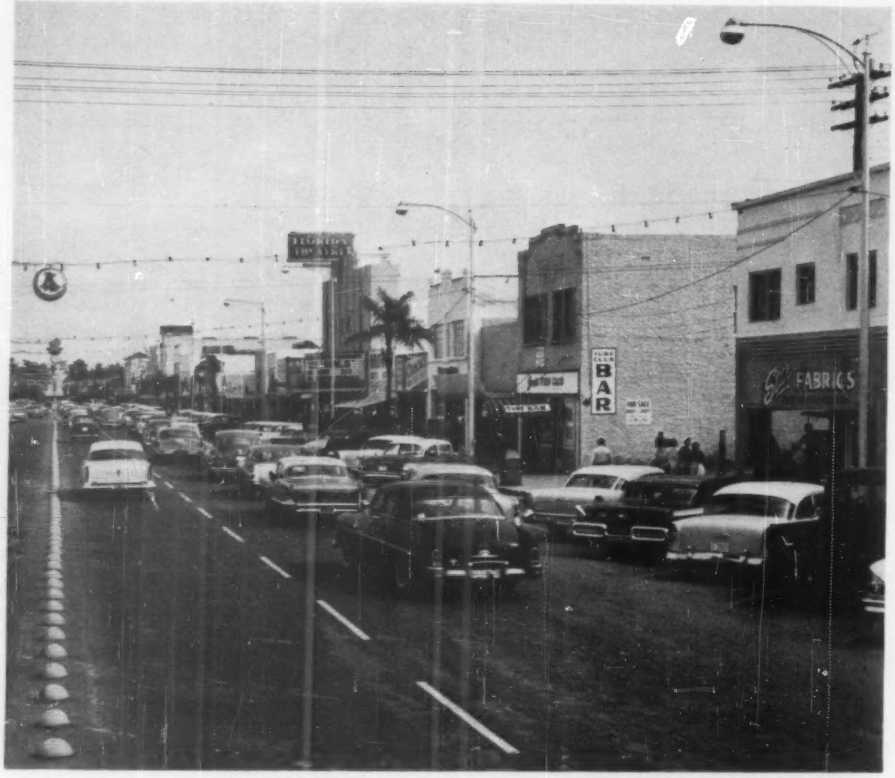
One of the problems of construction involved the location of the plant immediately behind a levee along the Wabash River. The pump room was excavated to a depth of 24 feet below normal flood stage. To resist uplift pressure, the pump room floor was constructed more than four feet thick. The walls in the pump room were built three feet thick.

During construction interlocking steel sheeting protected the footings from becoming undermined and also served as the outer form for placing concrete. To prevent the development of boils during high river stages, backfilling consisted of select clay material.

Floods cresting at 11 feet above normal flood stage occurred during the first stages of construction of the pump room. All construction work ceased and the pit was permitted to fill with water. The contractor was then required to build a levee around the excavated portion of the work to contain flood seepage until the river reached near normal conditions. The project was then completed without further unusual experiences.

The city financed the program by means of an $875,000 bond issue payable over a period of years with complete amortization by 1980. To cover these payments, the Common Council adopted an ordinance providing for sewer service charges based on water usage as metered, including a minimum monthly charge based on the size of the water meter.

Construction of the project was under the administration of Mayor L. T. Wampler. Responsibility for administering the operation of the plant rests with the Board of Public Works & Safety. Members include the Honorable Holly Kilfoil, Mayor; Curtis Kimmell, City Attorney; and Noble Spiker, City Engineer. ◄◄



From this unimaginative, ungracious type of shopping center . . .

. . . Hollywood, Fla., has switched to an almost park-like atmosphere.

Local business asked to be assessed for the purpose of . . .

Downtown Beautification

By **JOSEPH W. WATSON**
City Manager
Hollywood, Fla.

In undertaking civic improvement projects, Hollywood has enjoyed an atmosphere of cooperation between city and citizens. The beautification of a 1,500-foot stretch of our central business district by use of multi-colored tropical plants and canyon red sidewalks reflects this in several interesting ways.

Most notably it marked the first time in the city's 34-year history that a group of property owners, proposing a program of esthetic and economic benefits for the entire city, *asked* to be specially assessed for their share.

Declining sales figures gave impetus to the revitalization program as more and more shopping centers were established in the fringe areas and business drifted away from the traditional downtown shopping areas.

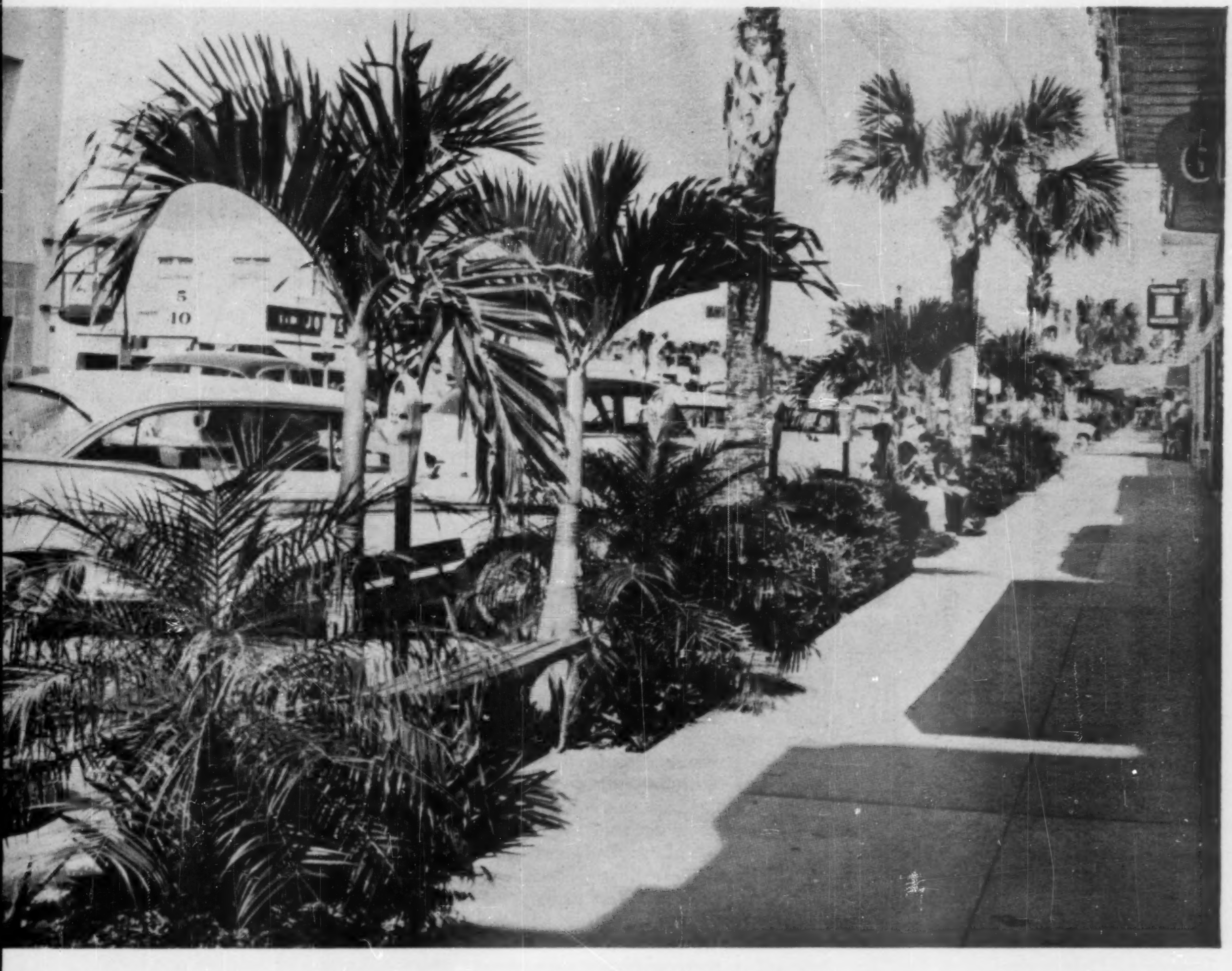
Next, Hollywood's sub-tropical climate, and the knowledge that year-round beauty and charm from tropical plants could be achieved, lent additional incentive to the program. Existing sidewalks of 15-foot width and a street 120 feet wide also were excellent assets to the beautification program.

As a result we have changed from a drab, stone cement and asphalt facade to a 150-foot-wide inviting boulevard of dressed-up store fronts, redwood benches and flowers and tropical trees. In doing so, Hollywood has:

- **issued nearly $250,000 in building permits in the downtown area alone for new structures and commercial renovations**
- **seen retail sales figures zoom from $34 million in 1957 to $60.7 million in 1959 *(Sales Management 1960 Survey of Buying Power)***
- **ordered a $12,000 downtown traffic and parking survey to further enhance shopping facilities**
- **prepared for additional beautification of fringe areas in the downtown section**

The Hollywood Downtown Association first proposed the change, asking for the beautification of a three-block, 1,500-foot stretch of Hollywood Boulevard to help keep shoppers in the city. Ample off-street parking facilities—now in the process of being expanded and with more to come in the future—proved to be strategically located and close to stores and shops so that walking distance was in most cases shorter than that provided by outlying shopping centers.

With not much more than con-



venience and local pride in hometown stores as a selling point, the Association undertook to overcome what appeared to be apathy to the idea, and then to raise an advance of $10,000 from property owners and merchants to start construction. Their estimated share, all recovered from the special assessment program of the city, amounted to $33,322, and was earmarked specifically for approximately 3,600 square yards of sidewalk paving, and for the shrubbery, plants and benches along the boulevard. The city agreed to share costs with the Association and footed the bill for the additional $28,039 of the project, covering replacement of parking meters, buried conduits and mains and installation of curbs and gutters.

In order to expedite construction, the city sacrificed a month's revenue from parking meters and cut the cost of parking in half. To avoid interfering with Christmas shopping, we scheduled the work to be completed by December 1st.

Mechanically, the job consisted of laying 5,600 feet of curb and gutter at a cost of $2.50 a foot, and 3,600 square yards of sidewalk at a cost of $3.74 a yard. The canyon red color was achieved by a "cut-and-try mix" in the concrete with iron-oxide pigment. Planter spaces are sidewalk-level height, approximately 20 feet long and 3 feet wide, with a built-in sprinkling system. As an afterthought, drinking fountains are now being placed in the planters.

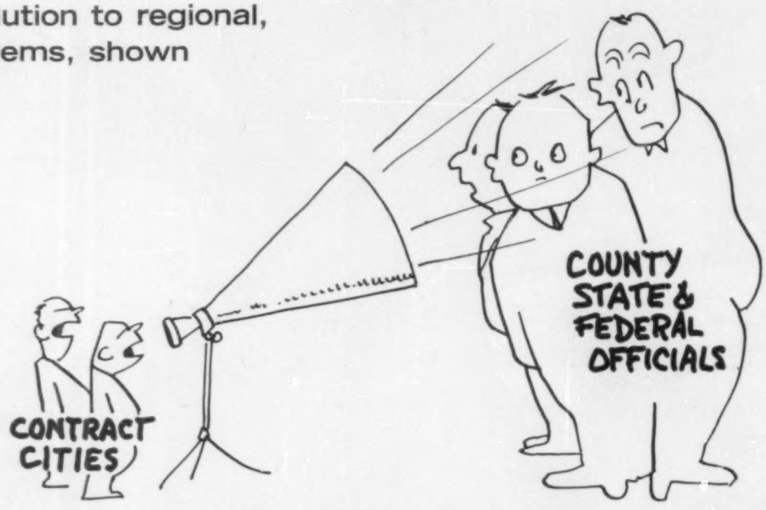
Side Effects

Besides changing a city that hadn't basically changed in many years, downtown beautification in Hollywood has had other side effects. Southern Bell Telephone Company tried public reaction to its initial placement of a new type outside telephone booth along the boulevard (page 44, THE AMERICAN CITY, April 1960). The result: excellent. The attractiveness of the colorful boothettes and the additional pedestrian traffic on Hollywood Boulevard have produced an additional source of revenue to the city, amounting to 15% of gross revenues after taxes, or approximately $1,000 a year.

Winter vacationers, who nearly double the city's population during the winter season, have noted and remarked favorably on the new look. Businessmen take more pride in their establishments and definitely vouch for an upswing in sales, beyond the expected normal yearly percentage increase. In general, we are enjoying renewed enthusiasm and civic pride in Hollywood and its downtown area. ◀◀

California's "Contract Cities"

. . . offer a practical solution to regional, intergovernmental problems, shown by six years of success



A collective "voice" that affects the policies of governing officials.

With six years of experimenting behind them, mayors and councilmen of the California Contract Cities Association met in Palm Springs, Calif., recently to assess results and map future plans.

These cities—22 in all—are cities in Los Angeles County which enter into contracts with the county or with private contractors to provide the bulk of their municipal services. The system originated in 1954 when the newly incorporated City of Lakewood first made such an arrangement with Los Angeles County. This started a wave of incorporations in California which brought 29 new cities into being.

The Palm Springs conference provided the first opportunity to assess the progress of this system which has caused nation-wide interest. The contract cities now present a collective "voice" which affects the policies of governing officials. This "voice," they feel, is second in influence only to the League of California Cities itself in its impact on county supervisors, state legislators, assemblymen, U. S. senators and on various new media.

This "voice" is especially significant in Los Angeles County where the contracting cities now make up approximately one-third of the county's 69 cities. With ten new incorporations pending the county may soon have all of its well-populated areas incorporated into local governments. The system is so successful that as each new city incorporates it does so on the contract basis. Of the 25 incorporations in the county since 1954, only two have established all their own departments. The rest have followed in general the original Lakewood plan—a combination of contracts, such as sheriff's services, building inspection, pound services; assessments districts, such as fire, sewer maintenance, sanitation; with some private municipal departments such as parks, recreation and public works.

To effect this change the cities have had the sympathetic ear of the top elected offiicals of both the county and the state. The major job facing the contract cities is to allay the fears of non-contracting cities. To do this they emphasize and keep repeating that the voluntary contract plan of government, as practiced in Los Angeles County, is not the "Metro" plan as practiced in Dade County, Toronto and elsewhere. There is no discernible interest in metropolitan government in California.

Happily the press has been friendly to the contract experiment. The *Los Angeles Times* devotes considerable attention to noting its progress but warns that consolidation must be approached gradually. "The success of consolidation does not require a complete and abrupt change in existing situations. It is far better served by gradual and voluntary participation," according to the *Times*. This voluntary participation which permits local government to contract for municipal services at their own discretion is what appeals to these California cities.

LOS ANGELES COUNTY MUNICIPAL CONTRACTOR
CONTRACTS WANTED IN
FIRE, POLICE
TAX ASSESSMENT
SEWER MAINTENANCE
YOU NAME IT!

These are some of the points made at the Palm Springs conference:

- **The contract plan has enabled cities to incorporate with relatively low budgets for municipal expenditures.**
- **It does not operate at the expense of taxpayers of non-contracting cities. This has been verified by two Grand Jury audits, conducted at the request of the contract cities.**
- **It has enhanced the concept of home rule. City officials report that the contract method gives them more time to concentrate on matters such as parks, recreation, traffic safety, planning and zoning.**
- **It has earned a permanent place in California. Top elected officials attending the conference assured the contract cities that the plan is based on good legal and financial grounds.**

The combined population of the contract cities is now over the half million mark and will be materially increased when the ten pending incorporations are completed.

It has reached a status of such importance and strength that the Association has voted to create a full-time secretariat, headed by an executive director, to administer its affairs. ◄◄

The 47 miles of unpaved streets within the city limits makes heavy equipment for street maintenance a necessity.

Earthmoving Equipment Kept Busy

. . . as Ocala, Fla., coordinates permanent and part-time jobs

By **REECE I. BICKERTON**
Superintendent
Dept. of Public Works

"Fluidity of equipment" can perhaps best describe earthmoving objectives of city-owned machines here at Ocala, Fla. For heavy earth-moving work, we find that a Caterpillar D7 Tractor and a D6 Tractor, a Cat No. 60 crawler-drawn Scraper and a Koehring 205 with ½-yard dragline offer a combination well suited to our needs.

This equipment is used mainly at our 25-acre sanitary landfill site and limestone quarry. In operation since 1955, we fill slightly less than an acre a month with garbage and trash at depths ranging from five to 30 feet, depending upon terrain. Garbage is covered daily and trash, weekly or bi-weekly.

But when work slacks off at the landfill, Carl Sommers, general foreman, puts the equipment to work on other earthmoving assignments, such as constructing playgrounds, drainage canals and settling basins, cleaning out the basins, building or improving city streets, stripping overburden from the quarry, mining Ocala limerock, feeding the crusher, and other activities.

Because Ocala is not blessed with natural drainage, it must build drainage facilities. In the past two years, we used two D6 Tractors (one was traded in this year for a turbocharged D7) and the No. 60 Scraper to build four settling basins and, with the help of the dragline, to improve two more. The basins range from 210 feet square and ten feet deep to 300 x 350 feet and 16 feet deep. Excavations average 6,000 cubic yards, but have gone as high as 20,000 cubic yards.

In addition, the D7-No. 60 com-

Each month Ocala disposes of more than 2,000 tons of refuse by the sanitary landfill method.

Because Ocala lacks natural drainage, the city must provide its own by constructing drainage ditches (left) and basins (right). City-owned equipment performs this work.

While hauling a load of fill to the trash pile, the dozer-equipped tractor spreads and compacts the material previously dumped.

bination recently completed a drainage canal 840 feet long, 30 feet wide at the top, ten feet at the bottom and from three to 12 feet deep. The D7 not only loaded the seven-yard struck scraper but it also cleared and grubbed dense oak and gum trees along the right-of-way and cut the slopes and ditch bottom. We completed the job in three weeks, using excavated material to fill low spots on a home-site development whose owner had granted the easement.

On another off-landfill application, the Cat D6 Tractor, Koehring dragline and four ten-yard Ford dump trucks cleaned out two settling basins. The dragline loaded muck and debris stockpiled by the tractor into trucks for transfer to a site now used as a junior rifle range. Because the D6 is smaller and therefore more portable than the D7, it is often used to rough grade or widen city streets along with a No. 212 Motor Grader. Ocala has approximately 50 miles of paved and 47 miles of unpaved streets.

The tractors, scraper and grader recently built a playground and 3,500-yard settling basin out of a five-acre cow pasture. Here we used a balanced cut-and-fill operation to bring low spots to grade.

Double Operation

At the landfill itself, the D7 and No. 60 perform the double function of stripping clay and sand overburden from a new quarry and using the material to cover refuse. Self-loading in 0.8 to 1.0 minutes, the tractor and scraper complete the 300-yard haul and return trip in less than four minutes. Included is the time taken by the tractor to doze material dumped on the previous trip.

We purchased the turbocharged 140 flywheel horsepower D7 instead of another D6 so that it could doze out most of the limestone, thereby saving the city 65% to 70% in drilling and blasting costs. Crushed by a 30-inch Maddox crusher at the rate of 500 to 600 tons per day, the rock is used on roads, parking lots, and similar areas. Incidentally, the bid price on the new tractor was not the lowest but we purchased it on the basis of past experience with this type of equipment. In the past four years the only money spent on the traded-in D6 machine for other than normal track wear was $60 for clutch work.

We currently use the trench method of sanitary landfill, dumping garbage into a trench about 450 feet long, 18 feet wide and six feet deep, cut by the dragline and backfilled by the D6 at the rate of one foot of cover for every three feet of refuse. The final layer of earth is three feet thick.

The city provides garbage collections three times a week at residential and commercial establishments, except firms with highly perishable refuse, where pickups are made seven days a week. Rates run from 75 cents to $1.25 a month for residences, $2 to $50 a month for business firms. Hauls average two miles, with a maximum haul of five miles. Our collection fleet consists of two Hydro E-Z Pak and three Leach packer-type bodies for garbage and one open-bed trash truck.

From point of collection to burial, average gross cost per ton is $8.40. This is a little higher than several other Florida cities which enjoy the support of the mosquito control program offered by the state. This results in considerable savings to the community. Ocala, however, bears the full cost of its sanitary landfill program.

We average about 775 tons of trash and 1,400 tons of garbage a month. On the landfill itself we estimate the cost of operation at 23 cents per cubic yard. This includes cost of equipment, maintenance, labor and depreciation, but does not include fuel and grease. Depreciation is computed at the rate of five cents a yard.

Other Equipment

Besides equipment already mentioned, the city owns an Allis Chalmers D Motor Grader, one three- to five-ton tandem Huber-Warco roller, a Rosco pneumatic traffic roller, one Hough 14B Payloader and ten trucks.

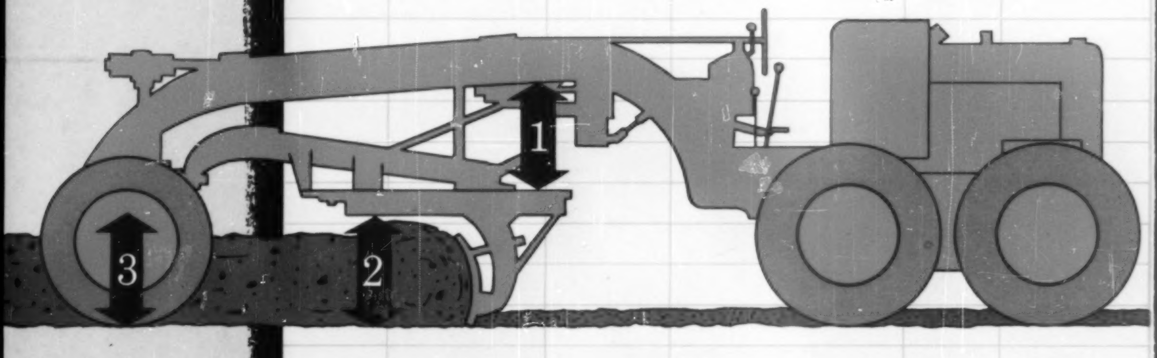
Department of Public Works operations are under O. L. McDonald, vehicle maintenance; Bryan Hatcher, public buildings; Frank Ward, sanitary and storm sewers; Ernest Kennedy, streets; and Lee Dyal, sanitation, plus Mr. Sommers and the writer.

What other jobs do we have lined up for our earthmoving machines when they're not working the landfill? One of them currently underway is that of building a nine-hole golf course in the northwest part of the city. When that job's finished, there'll be others, to keep the equipment busy for the benefit of our citizens. ◀◀

EQUIPMENT COST LEDGER

ITEM	MACHINE	PRICE	OPERATING COST	FUEL	PARTS

See how ALLIS-CHALMERS 3-POINT CLEARANCE DESIGN helps you get full value from your big motor grader investment



1. Vertical clearance room (1) is designed into Allis-Chalmers graders from the top down. The high-clearance main frame provides full circle and blade freedom and also allows adequate throat clearance (2) under the circle for full ROLL-AWAY moldboard loads without jamming material.

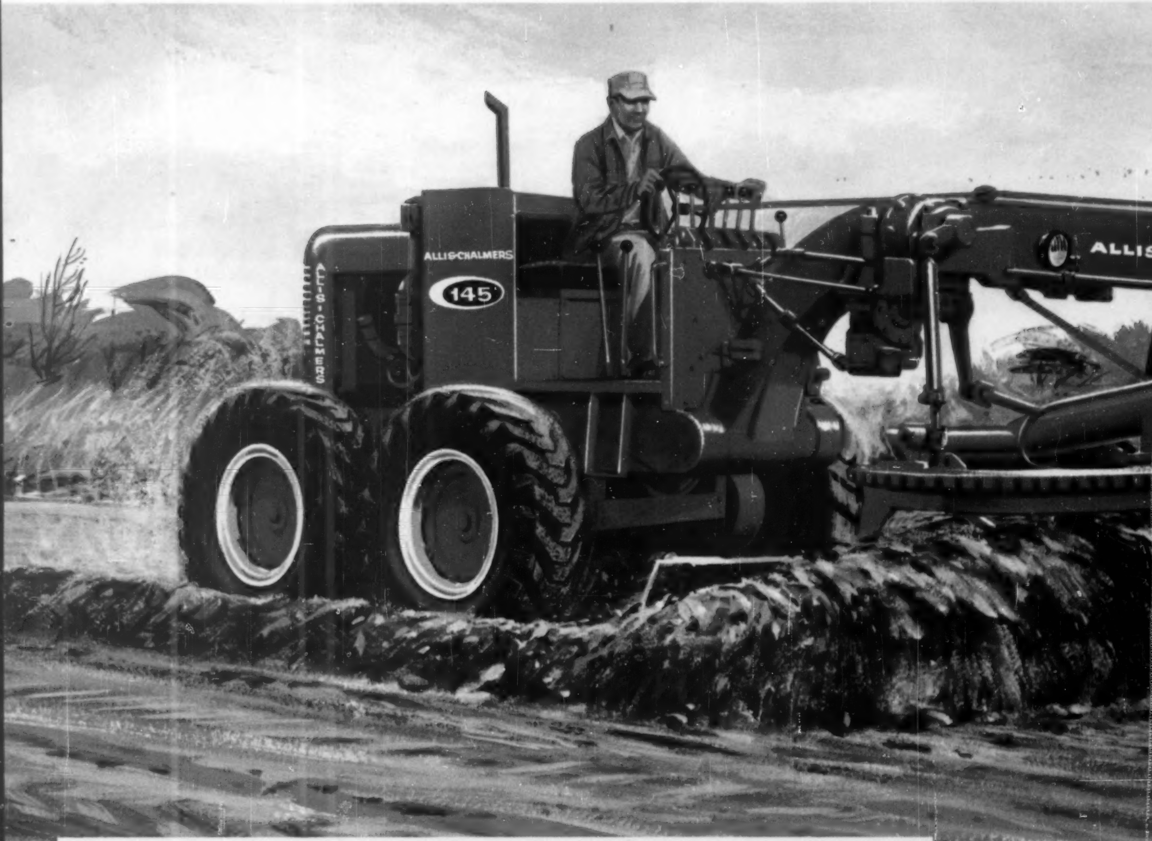
2. Wide-open design concentrates extra clearance (2) from the circle to the blade cutting edge to allow efficient "cut-lift and high-rolling" action of the ROLL-AWAY moldboard. The larger loads you get from this exclusive moldboard use the higher-than-ordinary clearance to maintain a friction-free rolling action.

3. Because the ROLL-AWAY moldboard, along with the extra "working" clearance, can handle extra capacity, the front axle is arched high (3) to let bigger windrows through to the blade. You'll get more work done—easier and faster.

← LIFT THE FLAP

ROLL-AWAY is an Allis-Chalmers trademark.

GET 3-POINT CLEARANC
. . . FOR FAS


ALLIS-CHALMERS
145
ALLIS-CHALMERS
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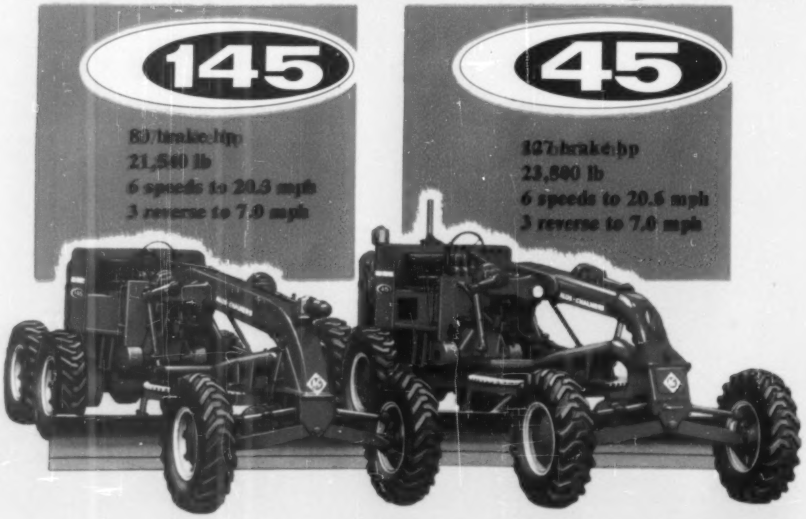
available only in these two great
ALLIS-CHALMERS motor graders



80 brake hp
21,540 lb
6 speeds to 20.3 mph
3 reverse to 7.0 mph

127 brake hp
23,800 lb
6 speeds to 20.6 mph
3 reverse to 7.0 mph

Smart

Q **If 3-point**
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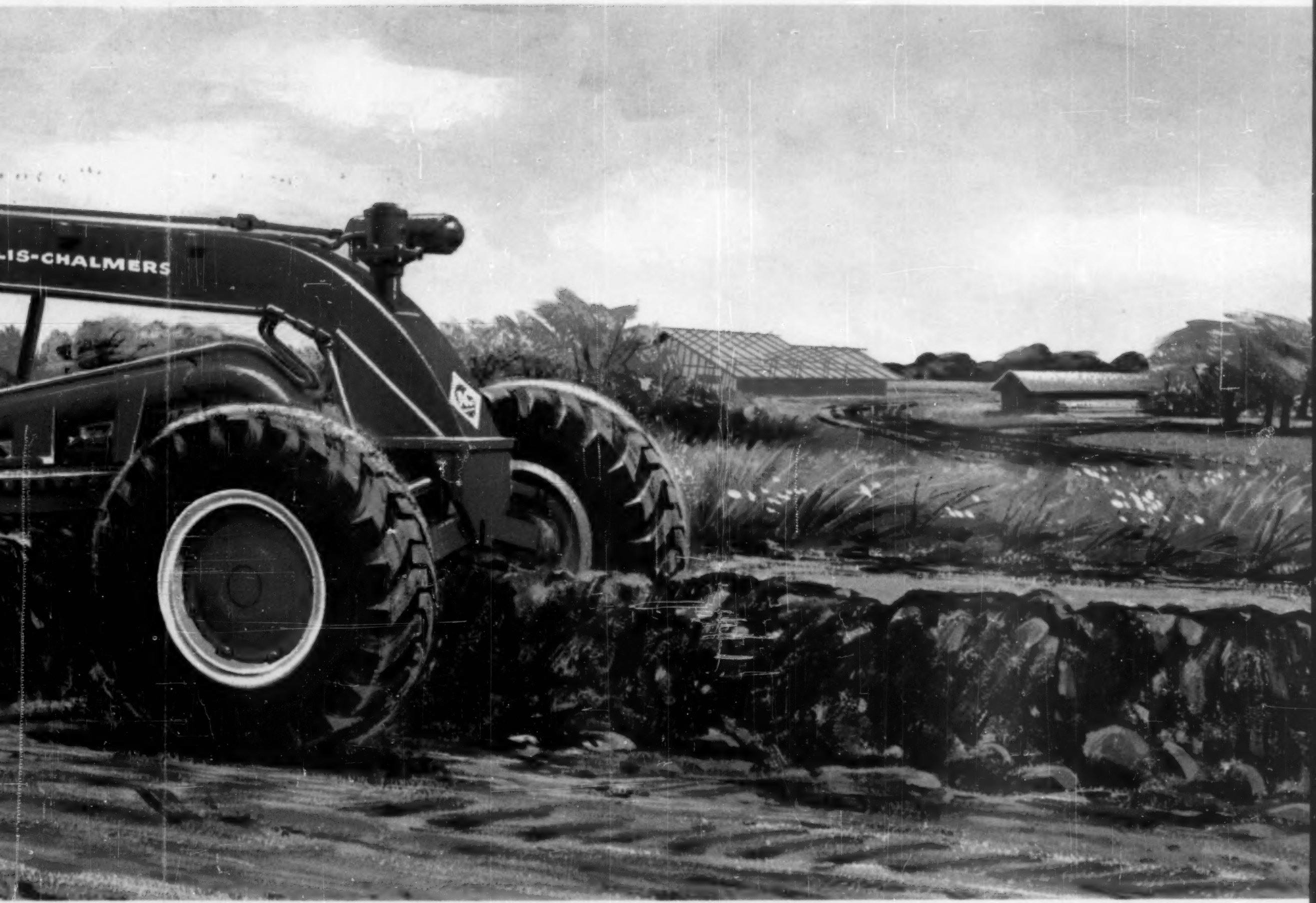


t buyers are asking these challenging questions

int clearance is so good,
don't others have it?

t it, other makes would have to completely
r motor graders. Consequently, they use mold-
ned to *push* loads at moldboard height. They
high-clearance system. Allis-Chalmers graders,
designed with frames at the necessary height
odate the extra load-handling capacity and
g advantages of a ROLL-AWAY moldboard—
o-frame clearance to permit complete maneu-

r grader with a lower main frame has to sacri-
ial clearance that makes possible the big pro-
35 and 145 give you.

Q Why don't others change their moldboard design?

A Just changing the moldboard won't work because they do not have moldboard-to-circle clearance to accommodate the bigger, rolling loads. To get this clearance would require a complete new machine design—from moldboard through frame.

Q What about visibility?

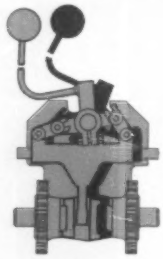
A Allis-Chalmers solved this with a single-member main frame that eliminates split-tail frame gaps. You'll notice, too, the lift cases are mounted close to the frame right over the circle. Control rods are shorter, more compact—don't interfere with operator vision.

But high clearance and big production are only part of the story →

Allis-Chalmers Motor Graders

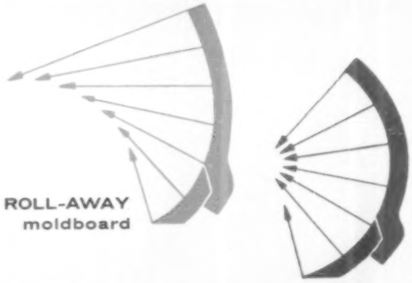
BUILT TO BENEFIT YOU . . .

Your Operators . . .
Your Mechanics



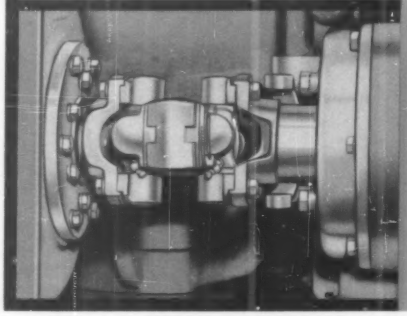
OPERATOR ACCEPTANCE . . .

Allis-Chalmers hasn't overlooked the operator. The big deck is cleared for action—with suspended brake and clutch pedals. Toggle-type control levers snap into place—no kickback. Foot pedal changes speed. Comfortable seat and steering wheel are adjustable.



TOP PRODUCTION . . .

Exclusive design of the ROLL-AWAY moldboard utilizes engine horsepower more efficiently to move bigger loads. Material is lifted and rolled forward . . . each load is live and moving . . . friction drag is reduced. You'll move more material than with any other motor grader of comparable power.



SERVICING EASE . . .

Practical design put all daily maintenance points in the open. True unit construction speeds shop repairs . . . double-yoke universal joint provides handy "disconnect" and easy removal and replacement of major parts without disturbing adjacent assemblies.

Find out for yourself. Your Allis-Chalmers dealer invites you to see these motor graders in action—on your job! Check the high-clearance system and handle the controls yourself—you'll soon know why you can't buy a finer all-round machine. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

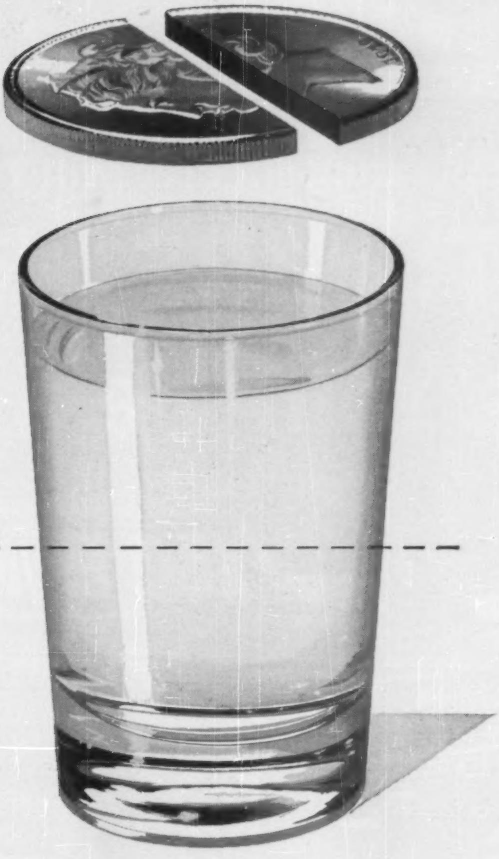
A-C
ALLIS-CHALMERS

move ahead with
ALLIS-CHALMERS
. . . power for a growing world

LITHO IN USA D&J-60

NOW...

cut new filtration plant costs 45%



Increase clear water capacity 100%

Specify Celite diatomite filtration

You can now double the potable water capacity available to your growing community and cut the installation cost of new filtration nearly in half. How? Specify diatomite filtration. You'll reduce land and construction costs because diatomite systems need only ¼ the housing space of equivalent-capacity sand plants. In fact diatomite systems are so compact, they can sometimes be added to existing plants.

If you're considering water filtration for the first time, it makes good financial sense to go Celite* diatomite all the way. An actual test installation by Johns-Manville has proved that a diatomite filter station can be installed for 45% less than a sand filter station of equal capacity.†

What's more, Celite will usually give better water clarity under comparable conditions. Turbidity is far lower. More suspended solids, including all floc, amoebae and algae, are removed. And a Celite diatomite system is easily operated and maintained by regular municipal water personnel.

Mined from the world's purest commercially available deposit, Celite is carefully processed for complete uniformity. Call your nearby Celite engineer for complete information on Celite's wide range of grades; he will gladly assist with your particular problems. And write today for FREE informative reprint.† Johns-Manville, Box 14, New York 16, New York. In Canada, Port Credit, Ontario.

*Celite is Johns-Manville's registered trade mark for its diatomaceous silica products.

†Comparison Studies of Diatomite and Sand Filtration by G. R. Bell, Journal American Water Works Association, September, 1956.

JOHNS-MANVILLE

Rambler American Deluxe
2-Door Sedan

Operating Figures Will Tell You . . .

The 1961 RAMBLER Is Your Best Fleet Buy!

Rambler Classic Super 4-Door Station Wagon—6 or V-8

Fleet operators' own figures show Rambler is the soundest fleet buy. Initial costs are lower and resale value is higher. The All-New Rambler American is the lowest-priced U.S.-built car, and all Rambler models are priced below comparable models of other manufacturers. Rambler's record-breaking economy means more miles per gallon. You save on maintenance costs, too. Fleet executives rate the quality-built Rambler the most trouble-free car. Once you put a new Rambler to work in your fleet, you'll order more Ramblers. Fleet owners always do. Better investigate today.

See Your Rambler Dealer
or phone or write
FLEET SALES DEPARTMENT—Dept. A-12
AMERICAN MOTORS CORPORATION
14250 Plymouth Road, Detroit 32, Michigan

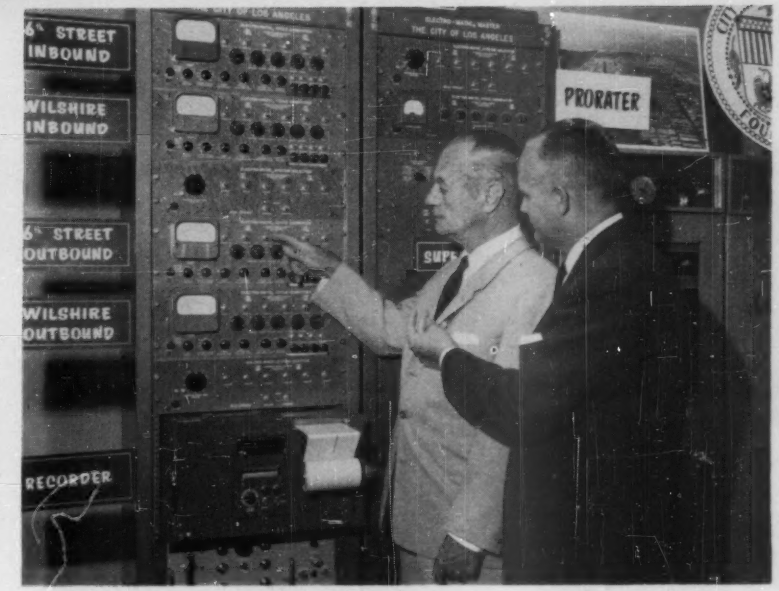
Strongest Guarantee In Auto History!

1 On all new Ramblers, the former standard warranty of 90 days or 4,000 miles is extended to 12 months or 12,000 miles, whichever occurs first. This warranty does not cover tire replacement covered by another warranty, nor normal maintenance.

2 New Ceramic-Armored muffler and tail-pipe are further guaranteed against defects for the life of the car while the original buyer owns it.

Fleet Leasing Arrangements Available

If your firm leases fleet units, ask your leasing company for low Rambler rates or write us for the names of leasing companies with whom we have working arrangements for your convenience.



Arthur W. Lutz, president of the city's Board of Traffic Commissioners and the author at the operating end of the new electronic "Pro Rata" traffic signal system.

Moving the Most Cars the Fastest

By **S. S. TAYLOR**, General Manager
Department of Traffic, Los Angeles, Calif.

On September 1, 1960, the City of Los Angeles took another step in its continuing struggle against traffic. At 10 A.M. an electronic switch in Room 1000, City Hall, was thrown by Mayor Morris Poulson as Arthur W. Lutz, President of the City's Board of Traffic Commissioners, radioed instructions which placed in operation the latest all-electronic radio-coordinated traffic signal control.

Its value is that it moves the most vehicles with the least delay through 36 intersections westward of downtown Los Angeles.

Traffic signal timing in this area is now handled by the vehicle flow rather than by the usual predetermined timing.

Automatic Preference

The operation always provides *automatic* preferential treatment for the direction of heaviest traffic demand. In the morning hours when the greatest traffic volume is coming downtown this inbound traffic will be given relatively long green signals. In the afternoon hours the outbound traffic will be favored.

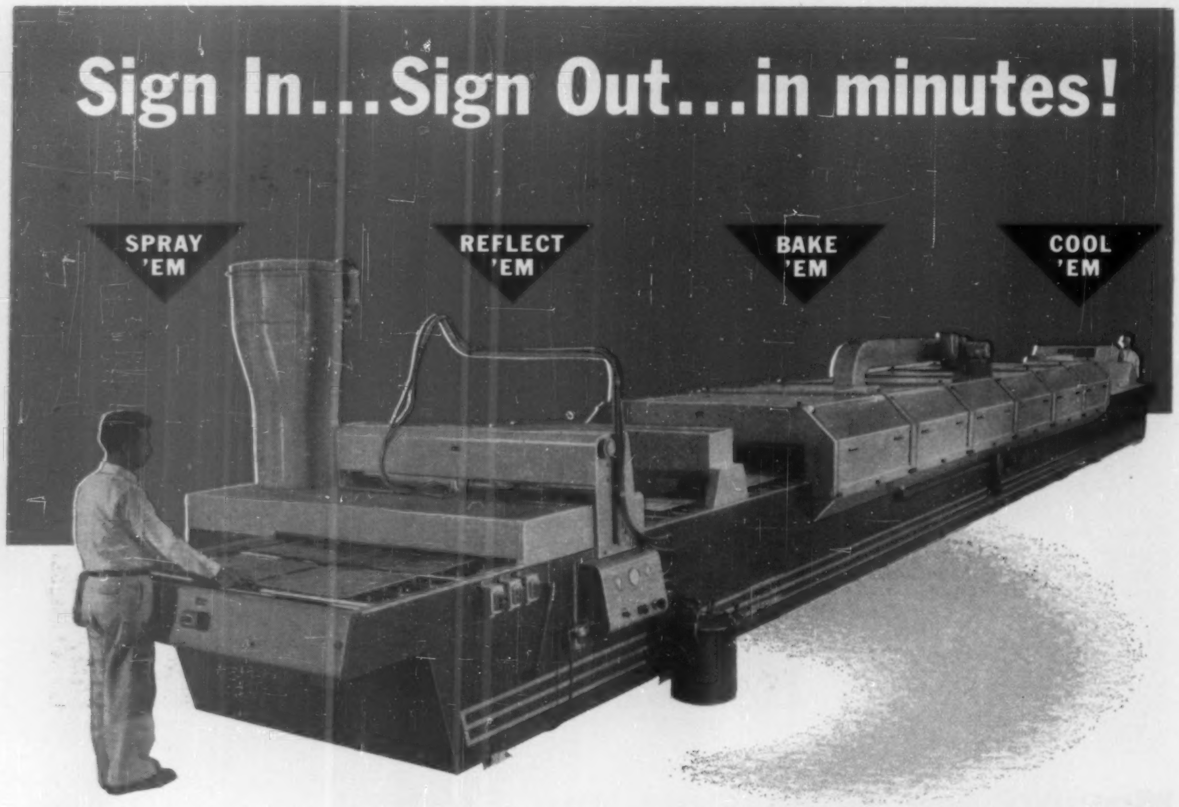
During hours of average and light traffic, the computers dictate a balanced traffic pattern so that neither direction is favored. Thus, the time which a motorist spends traveling through the area in which the "Pro Rata" System is located is reduced to a minimum.

This installation marks the world premiere of "Pro Rata" traffic control equipment in which all of the necessary electrical information relative to a system operation is transmitted via microwave radio link between widely separated radar detection devices, a master control unit on the tenth floor of City Hall and the group of traffic signal controllers at the 36 signalized intersections.

Vehicles moving into this system at either end are sensed and counted by radar detectors suspended over the roadway or by pressure pads in the pavement. The traffic-flow information is converted to electrical impulses and transmitted by radio to the master control unit on the 26th floor of City Hall. This information is analyzed by electronic computers on the tenth floor in the master control unit which then selects the traffic signal pattern promising the most efficient movement of traffic.

Electrical operating instructions are beamed from the tower antennae of City Hall via microwave radio link to receiving and decoding equipment in MacArthur Park and from there relayed to the local signal controllers at each of the 36 intersections in the system.

All of the traffic control equipment, including radar detectors, master and local intersection control units are the product of the research and manufacturing facilities of Automatic Signal Division of Eastern Industries Inc., Norwalk, Conn.; radio equipment for the system was supplied by Motorola Radio Co., Inc., Chicago, Ill. ◄◄



The WALD Automatic Sign Shop Works Fast, Sure, Economically

For Signs to be SEEN

PRISMO "200" HI-REFLECTIVE FINISH

Signs finished with PRISMO "200" have wide angle reflection for clear visibility. Legends register bright and sharp with non-glare legibility 24 hours a day. Even in bad weather PRISMO "200" has intense reflectivity. It reduces frost and moisture blackout problems to a minimum . . . It's by far the most dependable reflectorizing finish you can buy.

For volume production of quality signs at low cost, the Wald Automatic Sign Shop does the job. Two men easily operate the tandem conveyor set-up which coordinates the entire process with modern automation. The Autospray applies paints and binders with uniformity; the Autoreflector imbeds spheric-reflective material; the Autobake sets it with infra-red heat and the Autocool reduces heat to handling temperature. Everything is rigidly controlled and moves like clockwork. Any one unit can be worked separately, purchased singly or in combination. Send NOW for new folder.

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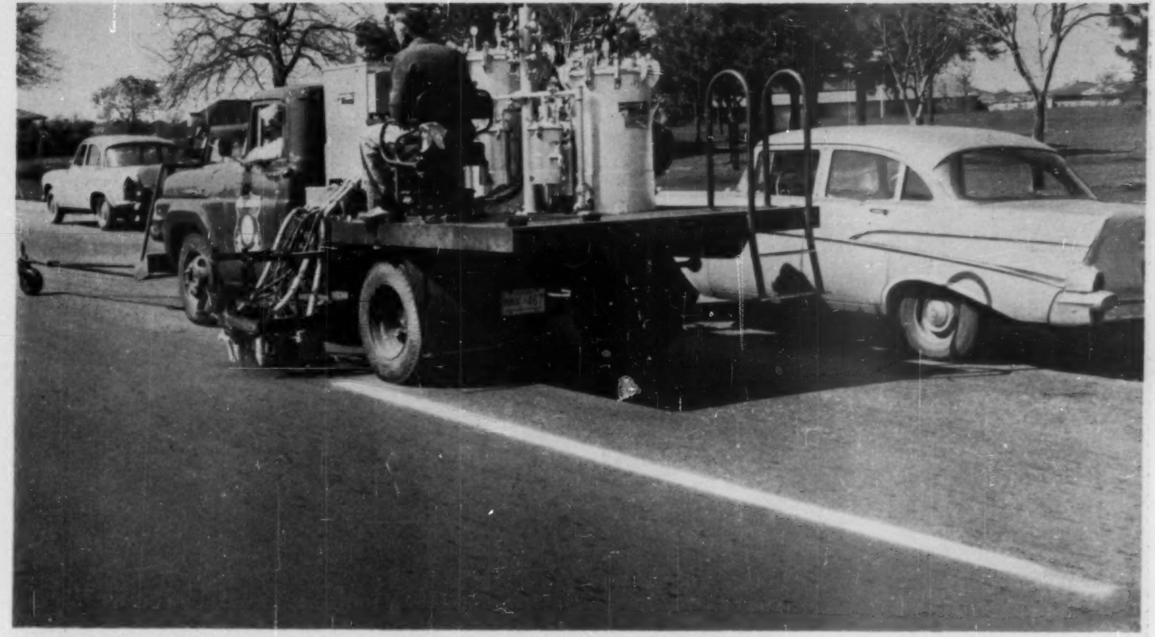
WALD INDUSTRIES, INC.

Huntingdon, Pennsylvania



A truck-mounted Kelly-Creswell striper owned and operated by the City of New Orleans.

New Orleans Now Stripes in Four Weeks

The striping program now underway in New Orleans involves 130 miles of white skip lining and 22 miles of solid yellow centerline striping. We are doing it with a new Kelly-Creswell striping machine that has increased our production to the point where the work is now accomplished in about four weeks. Formerly it required four months to complete our striping program for the six-month period.

Our specifications for the truck-mounted striper ar self explanatory. They pointed out that the City of New Orleans, La., would furnish a standard one-ton truck cab and chassis, equipped with heavy-duty rear springs and dual rear wheels.

The truck platform is 120 x 76 inches. On it are a 39-cfm Quincy air compressor; a 60- and 30-gallon DeVilbiss material container; and cleaner and strainer tanks. Also up there, facing the control panel is the operator's seat.

One of the features that we have found in the use of this machine, is that it does not require a skilled or specially trained driver. We feel that the increase in production capacity is of particular value to us in New Orleans, inasmuch as the rainfall here amounts to approximately sixty inches a year. Therefore, the number of days suitable for painting is limited but this machine does the job in the limited time.

It is our plan to increase our program 50% within the next two years, a feat which would have been impossible before we purchased the truck-mounted striper.

JOHN F. EXNICIOS
Assistant Traffic Engineer

Pittsburgh Likes Its Compacts

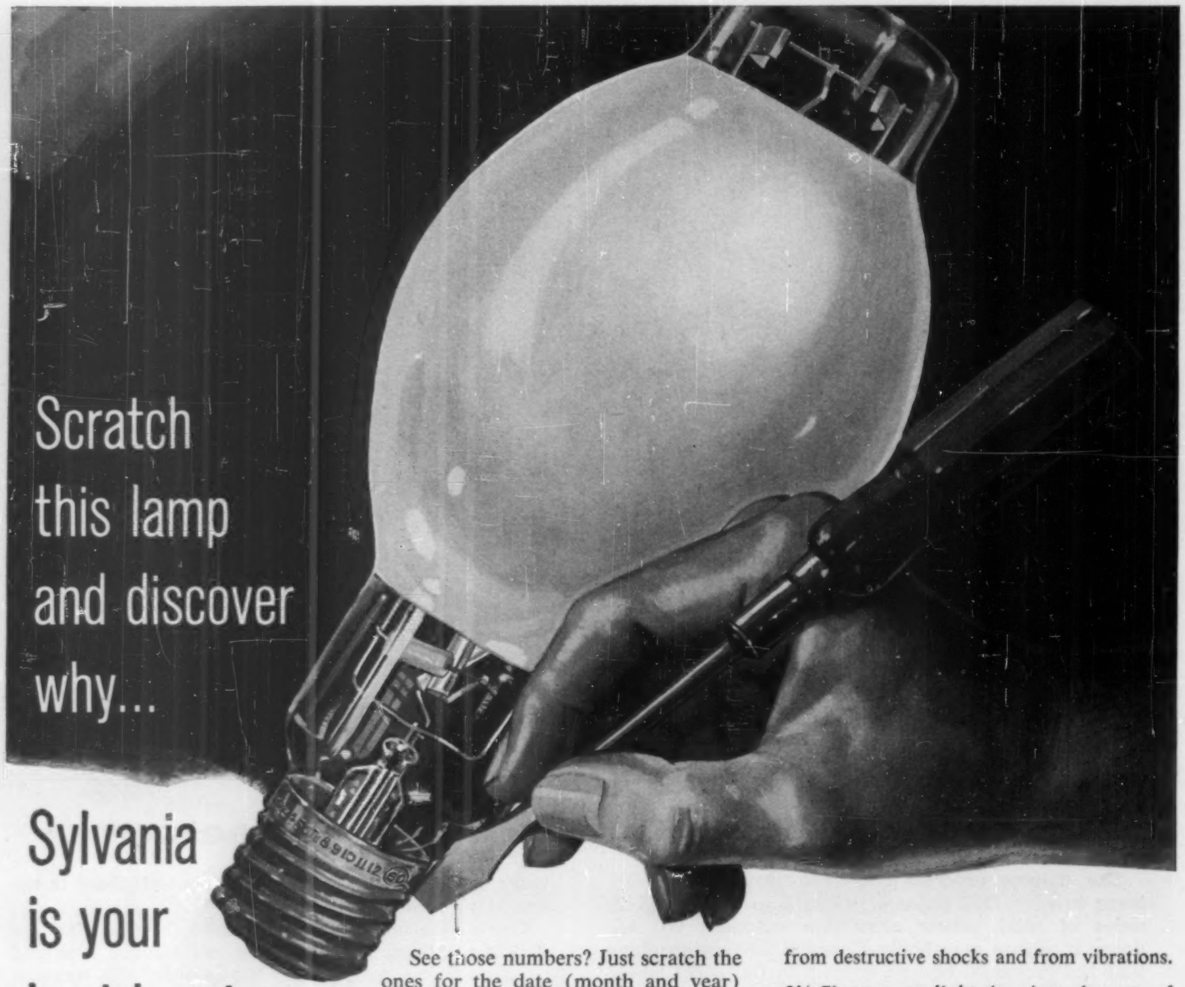
Pittsburgh, Pa., changed over from standard police cars to compacts in 1958. The decision to purchase the compacts was made only after Leo Gill, director of the city's automotive equipment, made a series of operational tests to determine if they would provide efficient and economical service.

Their operation in the past two years has proved quite satisfactory. The city saves several hundred dollars on initial cost; maintenance costs are considerably lower as are the cost of gas, oil and tires.

While providing the city with more economical service, we have not had to sacrifice efficiency in power, maneuverability and comfort. The compact eight-cylinder Studebaker Lark police cars now in operation can overtake anything on the road. Their shorter wheel base makes them easier to maneuver in the average street. Pittsburgh will continue to purchase and operate the compact cars, including all official cars used for city business.

Director Gill informed Mayor Joseph M. Barr that because of Pittsburgh's experience both Allegheny County and the Commonwealth are studying the feasibility of using compacts.

DAVE WELTY
Assistant Secretary
Office of the Mayor


Scratch this lamp and discover why...

Sylvania is your best buy in mercury lamps today!

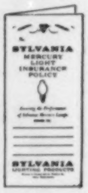
See those numbers? Just scratch the ones for the date (month and year) when you install a Sylvania Ruggedized Mercury Lamp. You'll not only have a simple moneysaving record of installations, you'll also mark the beginning of the longest, brightest service of any mercury lamp you can buy!

28% Longer life. That's what you get with Sylvania Ruggedized Mercury Lamps. An average usable life of 9,000 hours! *With consistently high lumen maintenance all the way!*

Less maintenance. Ideal for high-bay or highway installations. Pyrex weather-durable glass protects against moisture, condensation, moisture-laden or humid atmosphere, thermal shock. Ruggedized arc tube construction is specifically designed to protect the lamp from destructive shocks and from vibrations.

2½ Times more light than incandescents of the same wattage. Moreover, Sylvania phosphor improvements have increased the output of SH-1/R A.S.A. designation H1GL/W Mercury Lamps to 25,000 lumens—most efficient of any commercial mercury lamp!

Insured Performance. Only Sylvania, with an *exclusive* "Light Insurance Policy," guarantees you lower TCL (Total Cost of Lighting), which means cost of lamp plus power plus maintenance. Call your Sylvania representative or write us: Sylvania Lighting Products, a Division of Sylvania Electric Products Inc., Dept. 63, 60 Boston Street, Salem, Mass. In Canada: Sylvania Electric (Canada) Ltd., P.O. Box 2190, Station "O," Montreal 9.



SYLVANIA

Subsidiary of **GENERAL TELEPHONE & ELECTRONICS**

Free Parking In the Bag

Conventioners using City of Miami auditorium facilities are served with brown paper bags, conspicuously marked "Convention Parking," which are fitted over parking meters by Miami's uniformed "meter-maids."

This gesture of courtesy to Miami visitors was put into effect by City Manager M. L. Reese following a suggestion by the visitors' relations committee of the Tourist and Convention Council of the Miami-Dade County Chamber of Commerce.

Here Miami "meter maid" Gloria Rodriguez demonstrates the city's aid to convention parking at Bayfront Auditorium. ◄◄

Where Atlanta Got 40 More Police

Only after the last war—when the central downtown area suddenly became the hub of a million population—did we in Atlanta, Ga., begin to think seriously of traffic congestion.

A half million persons enter and leave the downtown area daily. Cordon counts show a daily in and out of 250,000 vehicles.

We adopted the standard measures for dealing with heavy traffic; eliminated on-street parking; developed a system of one-way streets and eliminated left-hand turns at busier intersections. Our traffic light control system is now 95% progressive.

A north-south six-lane bypass that skirts the central business district opened up an ideal path for vehicles traveling across town.

We went to one-man accident investigation cars to provide better coverage and increase enforcement.

Then sections of a gigantic new expressway system began to be opened. The expressway started pouring traffic at 50 miles per hour into already overcrowded streets and traffic during the peak hours slowed to a snail's pace.

As trouble spots developed, motorcycle officers were assigned to point control on intersections. Within a few weeks the entire motorcycle squad was demobilized to work traffic. Patrol cars were unable to maneuver through heavy traffic and enforcement stood still when it was most needed.

Sufficient manpower, of course, was the answer. But where were we to get it? What police department ever has sufficient manpower to meet the demands upon it? We did not have the manpower and there seemed to be no possible way of obtaining it.

So, we took a cue from private industry. We felt that a man trained for a specific job was best qualified to do that job. We advanced the idea of employing trained police officers on an overtime basis during the peak traffic hours.

By assigning overtime men on point control, we could relieve motorcycle officers and permit them to return to field enforcement.

In September, 1959, the mayor and board of aldermen approved an appropriation to employ 40 officers on an over-time basis. Twenty were assigned to work from 7:30 to 9:30 a.m. and 20 were placed on over-time duty from 4:30 to 6:30 p.m.

The men were paid at the rate of $2 per hour for the actual time worked. They were not needed on Saturdays and Sundays. Thus we were able to get the services of a fully trained officer at the time he was most needed: Monday through Friday for $20 a week.

HERBERT T. JENKINS
Chief of Police

This article is taken from the June 1960 issue of *Traffic Digest and Review* of Northwestern University, Evanston, Ill.

Up-to-Four-Hour Parkers Favored

The Regional Plan Association has endorsed Traffic Commissioner T. T. Wiley's proposal to build parking garages in midtown Manhattan provided these garages are strictly limited to up-to-four-hour parkers and on-street parking in their vicinity be eliminated.

The short-term parker as a customer and businessman is the "productive parker" in contrast to the "commuter parker." The latter needs better transit and should leave his car at home or at an outlying lot.

C. McKim Norton, Regional Plan Association executive vice-president, denied that the proposed garages would materially add to midtown Manhattan traffic congestion. "Studies show that short-term parkers, for whom these garages are designed, do not compete with rush-hour traffic."

Mr. Norton said the following RPA findings support the Department of Traffic's midtown Manhattan garage proposal:

Manhattan's central business district is becoming the region's "specialty town." More and more it is becoming attractive to specialists, less and less to standardized activities.

If the short-term, productive parker from the suburbs is to be able to use these specialized business and professional services, entertainment and shopping facilities, then the automobile—the common denominator of suburban transportation—must be served. ◄◄

The Christmas lights of Grandview Parkway pierce Traverse Bay.

Christmas Lights in Traverse Bay

In this section last month (p. 139) there was shown the 400-watt lighting equipment on our Grandview Parkway curving around Traverse Bay, Mich. Since then the color decorations mentioned have been installed. Their beauty can perhaps be suggested at least by the photograph in black and white.

The material used was Roscolene Plastic made by Rosco Laboratories, 29 Moore St., Brooklyn 6, N. Y. The sheets were fixed around the luminaires. The effectiveness of the display must be seen in color to be properly valued.

Public reaction last year was so favorable that included were many requests to leave up the decorations all year or to put them up during the summer. Needless to say they are up again this year.

N. G. Damoose
City Manager
Traverse City, Mich.

Enfield's Story—Good Street Lighting

The population of Enfield, Conn., has tripled since 1945 and the sharp upswing in the growth curve presented a host of problems.

To keep ahead of the population boom and the increasing traffic problems, our municipal officials launched a re-lighting project downtown and in the residential areas.

The once peaceful business streets of Enfield have become traffic arteries lined wtih commercial establishments. The existing ornamental units have been supplemented by mercury-vapor luminaires. The new fixtures are mounted 30 feet above the street at 100-foot intervals downtown and on every other pole in residential areas.

Pavement illumination is now six times greater than before.

Police Chief Walter Skower says, "After the new street lighting was installed in town, serious crime—the most costly to investigate—was virtually eliminated."

John Guminiak
First Selectman

Blackwell Road-Lighting Tests

At scientific lighting meetings in Phoenix, Ariz., Los Angeles, Calif., and Memphis, Tenn., C. L. Crouch, the Secretary of the Illuminating Engineering Research Institute, discussed recently the continuing series of tests which indicated that most highway lighting may be 50% below the level needed to safely stop a vehicle moving at 40 to 45 miles an hour. These studies, conducted by Ohio State University light-and-sight scientists, showed that even those highways lighted at the level presently recommended by road-lighting experts do not have enough illumination for reasonable pedestrian safety.

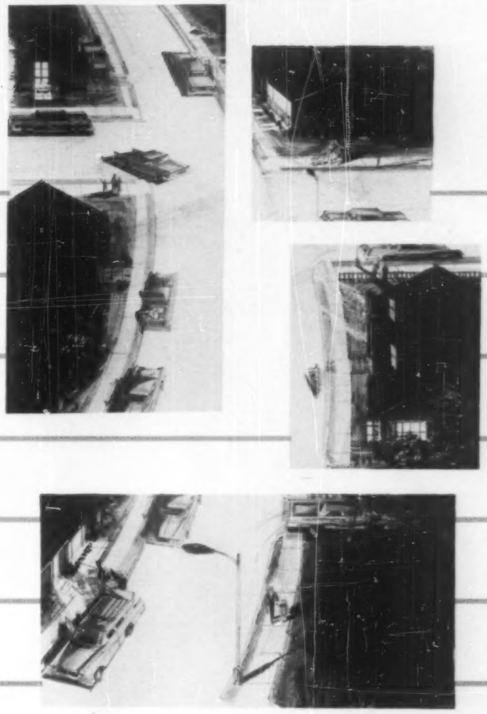
The road-lighting studies were conducted by a team headed by Dr. H. Richard Blackwell, director of the Institute for Research in Vision, Columbus, Ohio, under a grant from the I.E.R.I. Dr. Blackwell conducted the tests with a new instrument designed by a member of Dr. Blackwell's staff.

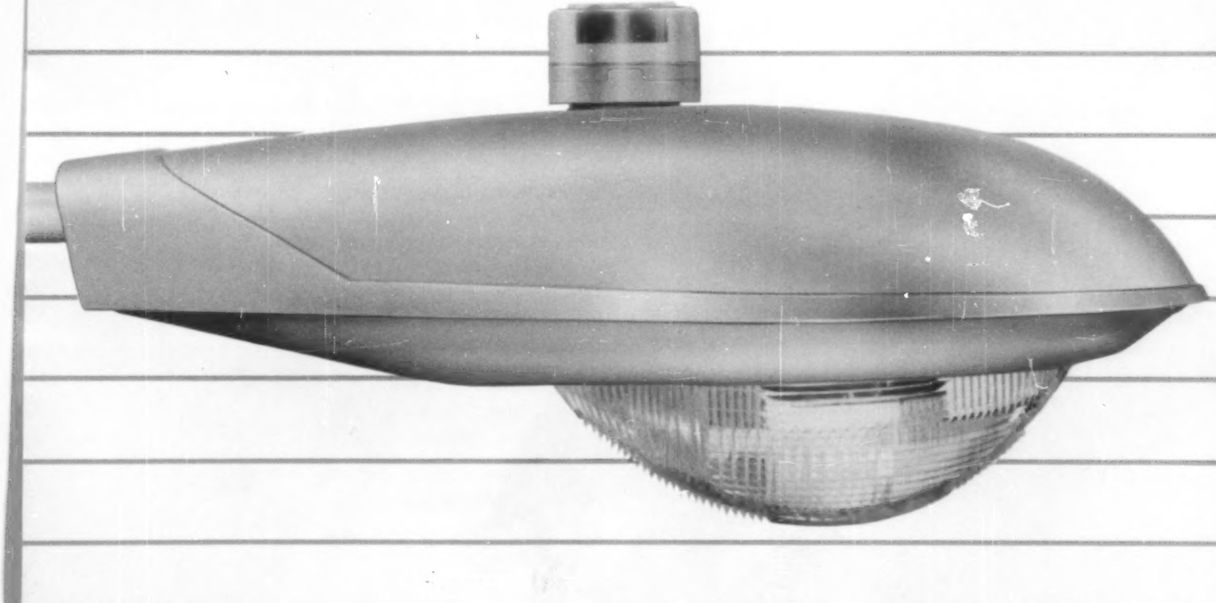
Recommended practice for roadway lighting as published in lighting guides ranges from .2 to 1.2 footcandles. Dr. Blackwell's measurements indicated that 1.87 footcandles were needed to be able to see dark objects as well as light objects on roadways with various pavement surfaces.

"These measurements apply to the inside or driving lanes of highways," said Mr. Crouch. "Dr. Blackwell also found that for the curb lanes—those lanes which pedestrians enter when stepping from the sidewalks—about twice as much light is required for relative safety." ◂◂

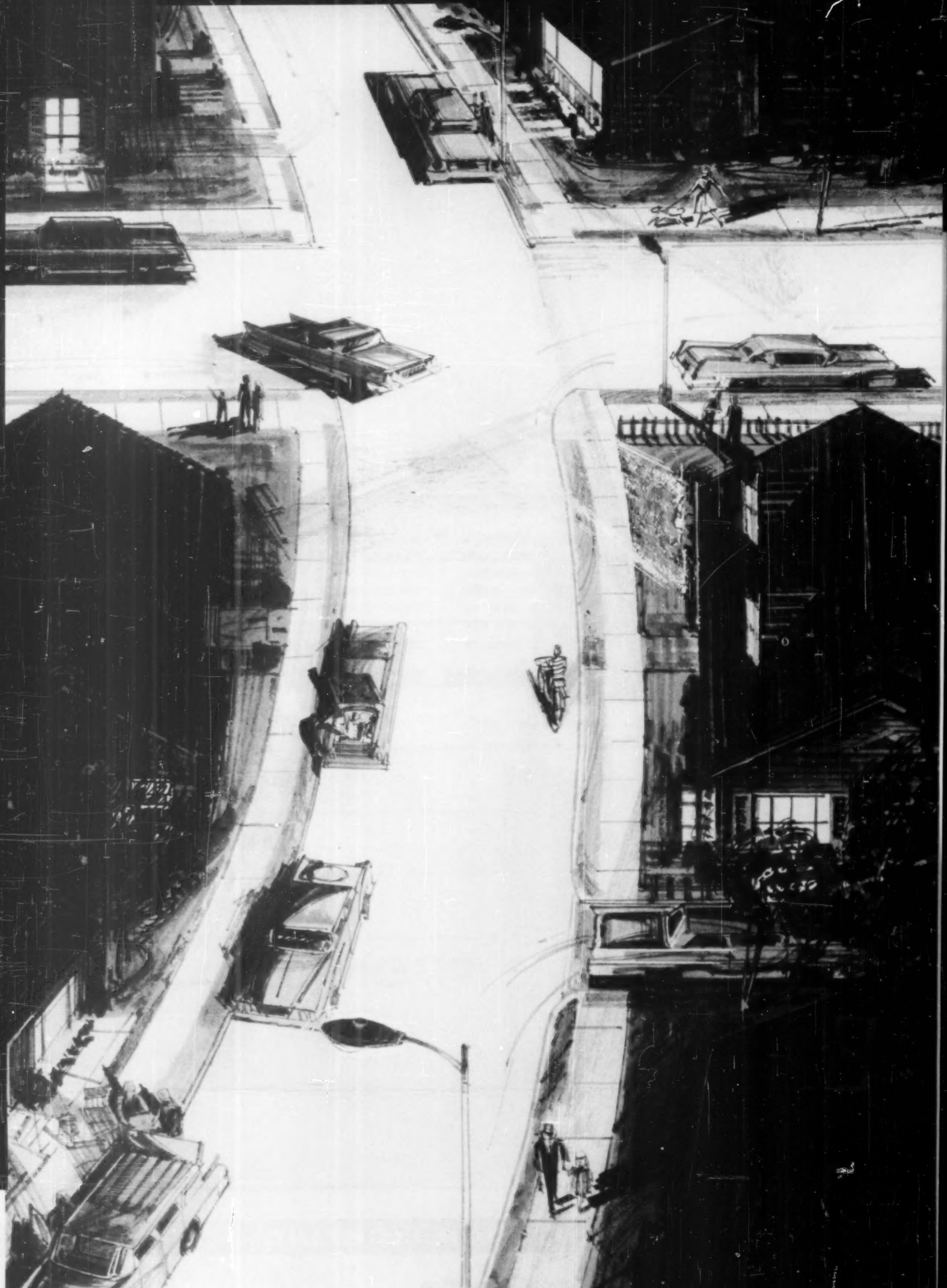
INTRODUCING...

**the efficient,
new mercury
luminaire that
makes code-level
residential lighting
practical for
every community**





NEW GENERAL ELECTRIC M-250R LUMINAIRE



Bring the beauty of modern lighting to the streets where taxpayers live

Exclusive design aims light to streets, sidewalks . . . away from bedroom windows

Here's the residential street lighting luminaire all America has been waiting for! It's the new General Electric M-250R . . . a small, attractive, high-efficiency mercury luminaire that makes code-level residential lighting a practical, attainable goal for every community in America. Now, the taxpayers in your city *can have the type and amount of residential lighting they need—and want—on a bargain cost-of-light basis.* Here's how:

Unmatched efficiency—Instead of spraying light and brightness toward bedroom windows, the new G-E M-250R employs an exclusive, highly-efficient refractor which directs significantly more light on the street and sidewalks away from houses and lawns.

And, the new G-E luminaire, with "bonus-line" mercury lamp, delivers nearly three times the useful light six times as long as does a filament lamp and fixture of equal wattage. For example, a 175-watt M-250R yields 7000 lumens, compared to the 2500 lumens of a similar filament unit.

Unmatched appearance—It's a fact that property values are increased when streets are relighted with modern equipment. Functional, smart styling of the new G-E M-250R luminaire complements the appearance of any modern neighborhood, by day and by night.

Equally important is the fact that—with modern residential lighting—your citizens can benefit from increased safety . . . in terms of reduced night-time crime, vandalism, fewer traffic accidents.

Unmatched economy—The cost of lighting residential streets is, when compared with other public-works expenditures, already the biggest bargain in the municipal budget. Now consider this new fact: You can light your residential streets to code level with a 2500-lumen filament unit every 120 feet. But, the same street can be lighted—to higher than code-level minimums—with M-250R's spaced every 240 feet . . . *just half as many units!*

SPECIAL "DEMONSTRATION BLOCK"

General Electric is making a special three-unit "Light-a-Block and SEE" package offer to electric-power suppliers for a limited time. Let them set up for you a permanent demonstration on a residential block in your community. Let everyone see the beauty of residential neighborhoods spring to life under modern lighting! Show all municipal officials the economical lighting they will want to have on every residential street. See for yourself—under controlled conditions—the many practical benefits of the M-250R luminaire.

Start the "Light-a-Block and SEE" project in your community right away, through your electric-power supplier. Your General Electric Sales Engineer or Agent will be happy to give him the details. And, for the new M-250R descriptive bulletin, write General Electric Company, Section 460-10A, Schenectady, New York.

Outdoor Lighting Dept., Hendersonville, N. C.

Progress Is Our Most Important Product

GENERAL ELECTRIC

NEW GENERAL ELECTRIC M-250R LUMINAIRE

Lighting Policy in Cayce

The city of Cayce, S. C., is a new and mushrooming city in the metropolitan Columbia, S. C., area. In 1948, it had 2,000 inhabitants and was one square mile in area. Today, 24 annexations later, it has seven square miles and 10,000 people. As in all exploding communities the desire to keep abreast of new requirements is paramount in the council's thoughts. There is a difference between desire and accomplishment. Cayce began to look toward ways of cutting down expenditures or getting more for the money.

I am the new city manager (July 1959). I found a reasonable crime rate but an extremely high accident rate. An express highway through the length of the city produced a major share of the accidents. The street-lighting program was "inadequate" and lights were installed on citizen request. Five sizes of street lights were in operation: 1,000, 2,500, 4,000 and 6,000 lumen incandescent lamps in both closed and open fixtures and 21,000-lumen mercury vapor lamps in enclosed fixtures. Each of these types was rented to the city on a monthly basis by the South Carolina Electric & Gas Co. Three-months study of "accident prone areas" showed that improper lighting and improper sight distances contributed to the property damage and bodily injury in the mounting toll of accidents.

With this information the city approached the South Carolina Electric & Gas Co. The meeting was fruitful and several weeks later this group visited the outdoor lighting display at General Electric's Hendersonville, N. C. plant. This outdoor test lab features incandescent, mercury and fluorescent lighting with lamp spacing, pattern, size, street surfacing materials and widths; from residential asphalt to major thoroughfare. The display clearly demonstrated the relative brightness from glowing incandescent to penetrating mercury vapor to soft fluorescents. The city had to decide which type of unit would best fulfill the community's needs.

Cayce adopted two basic units: the 21,000-lumen mercury vapor on major streets (25,000 vehicles per day) and 6,000-lumen incandescent lamps for minor streets. The mercury units have been installed at 100-foot staggered intervals and the incandescent units at either 100-foot or 200-foot intervals, depending on traffic counts. Street lights have been installed in isolated areas that are potential trouble spots for crimes or accidents.

It is too soon to fully evaluate the change in street lighting. Accidents appear to have been reduced by 20-25%, enough to justify expenditures of a sizeable sum of monies.

HUGH N. THOMPSON
City Manager

Decatur Keeps Lighting to High Standards

Three years ago the city of Decatur, Ill., with a population of 80,000, began relighting the downtown area with a fluorescent installation on the two main streets. This summer fluorescent lights were installed on another major street for its length in the central business district. A contract for completion of the last part of the downtown area has recently been awarded. Also, we are now installing new, more powerful incandescent luminaires to IES standards in the fringes of the central business district.

At the direction of the City Council, the Illinois Power Co. has undertaken a survey of all street lighting in the city outside the central area. They will present plans and costs to bring the whole city up to IES standards. As they complete work on parts of the city, other projects are authorized by the City Council. All newly annexed areas and new subdivisions are immediately installed up to standards.

We anticipate it will take three to four years to complete the entire program which should mean five to six times more lumen output by the street light system at approximately twice the annual cost of the present system. Modern luminaires should distribute these lumens more effectively.

JOHN E. DEVER
City Manager

$130 to $300 to Install a Mercury Unit

Mercury vapor street lights are being installed in Fort Pierce, Fla. To the 180 already in place, we are adding 77 additional units at an estimated cost of $19,000, to give us 257 Sylvania mercury vapor lamps in Westinghouse luminaires. Of these, 130 are mounted on steel poles, 31 feet up to the light center. The balance are on wood poles, either existing or specially selected and treated new wood standards.

Our present cost to install a complete light on a steel standard is $290 to $300, depending on the foundation, bid prices, and other variables. Our cost to install a unit on existing distribution poles is $130 to $140. Our cost to install a complete light on a specially selected and treated wood pole, which is painted after installation, and is used exclusively for street lighting is $180 to $190.

Our maintenance cost on mercury vapor units is very low. Maintenance on treated wood and Union metal steel poles should be about the same. However, we are located in a severe salt spray area where steel poles must be painted every five years. Based on our experience in Florida, wood-pole standards, specially selected and treated by the Koppers Co., and painted in the field after installation, will allow many cities to put in at least 40% more lighting where wood standards are acceptable, than would be possible if steel standards were used.

Our street lighting is all laid out on I. E. S. and A. S. A. recommended lighting levels, except in built-up downtown areas where it is higher.

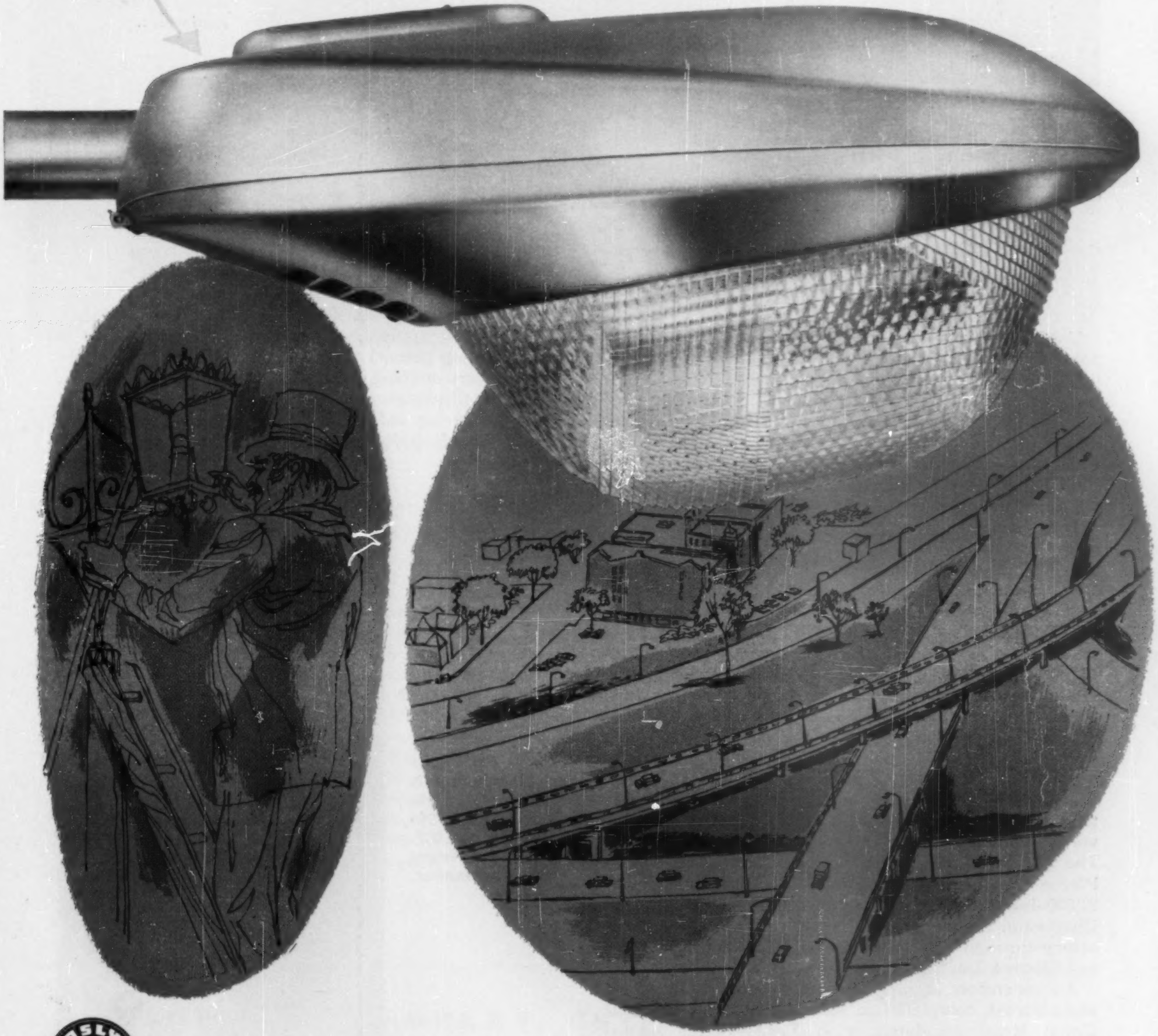
We have had no objections to the color of the straight mercury vapor lamps. We have used a few of the color corrected but have never had any request by our merchants for these.

J. FLOYD GLISSON
City Manager

TAKE ADVANTAGE OF THE BEST IN

LIGHTING PROGRESS

Street and Highway Lighting has come a long way from the first gas lamps. Joslyn reflects true progress in this field. The new Joslyn "400" Built-In-Ballast Mercury Luminaire incorporates night time efficiency with day time beauty...is the lightest in weight, the most compact in design, the most effectively streamlined for low wind resistance. Ask for Bulletin J2-116-A to obtain detailed information.



JOSLYN MFG. AND SUPPLY CO., 155 N. WACKER DRIVE, CHICAGO 6

Eastward from Boulder City, Nev., East Charleston Boulevard is lighted by Westinghouse 21,000-lumen mercury-vapor luminaires.

The City of Bright Futures

By **R. P. SAUER**
Director of Public Works

The city of Las Vegas, Nev., had "growing pains"—population up 34% and area expanded 38% in only five years. The need for more and better street lighting stared the Public Works Department in the face.

Las Vegas is progressive, accounting for a steady improvement of existing street lighting facilities. Our usual procedure for obtaining the funds, except for subdivisions, is by the assessment district method, whereby the property owners vote on a bond sale.

During the last five years street lighting projects, including subdivisions, have added 1,645 lights to our system. This is 70% more than we had in 1955. Subdivisions have accounted for 80% of this increase.

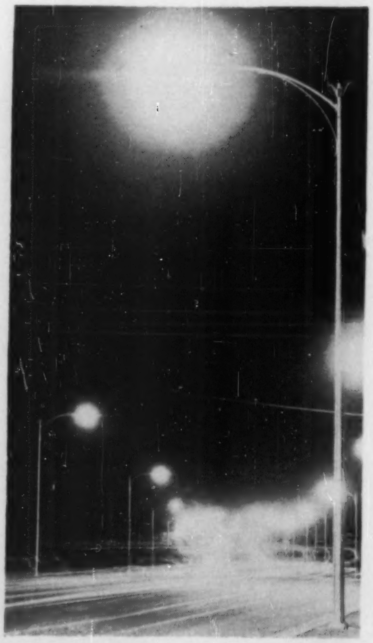
One of our lighting projects, completed in 1955, included 186 new street lights on Las Vegas Boulevard. They are General Electric Form 400 mercury-vapor luminaires, 21,000 lumens, mounted on Pacific Union Metal standards with GE photoelectric controls. This Boulevard is also U. S. Highway 91, traversing the north-south heart of the city coming and going from Salt Lake City and Los Angeles. It is one of our outstanding thoroughfares for 24-hour brilliance.

In 1958, an assessment district was created to extend street improvements on East Charleston Boulevard, including 48 new street lights to cost $19,000. The standards are Pacific Union Metal with Fisher-Pierce photoelectric controls, and mercury-vapor 21,000-lumen Westinghouse OV20 luminaires. East Charleston Boulevard is the main east and west traffic artery through the city and is a direct route to Reno and Hoover Dam as U. S. Highway 95.

An extension of modern street lighting on North Main Street, completed in 1959, added 50 new Pacific Union Metal standards, with Fisher-Pierce photoelectric controls and Westinghouse 21,000-lumen vapor luminaires, costing $18,000.

A new improvement project now being formulated will add 78 fluorescent luminaires to our system on Fremont Street, in conjunction with the widening of a seven-block section of this key route which bisects the main business district. This improvement project enhances the approach to the downtown district. It is another step toward the higher street lighting standards we are striving to attain.

Street illumination is civic progress, added traffic and pedestrian safety, and better business. We are in favor of it—in cooperation with the property owners. ◄◄

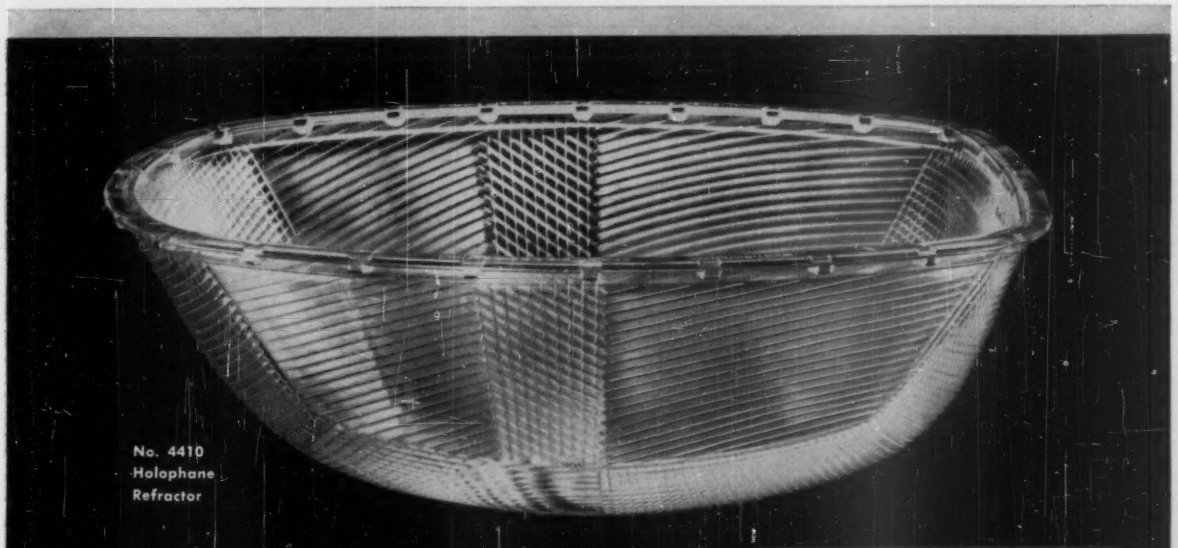


Las Vegas Boulevard is bathed in light from 21,000-lumen G.E. mercury-vapor luminaires.

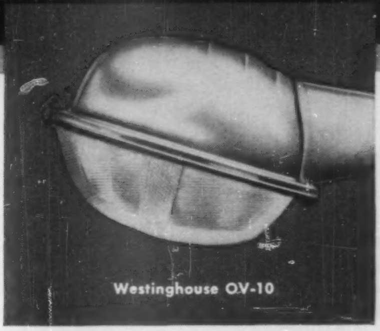
HOLOPHANE Breakthrough . . . New PRISMALUME®

(Prismatic Acrylic Plastic)

REFRACTOR For Mercury Vapor Luminaires



No. 4410 Holophane Refractor



Westinghouse OV-10

- *Expressly Designed for*
  WESTINGHOUSE OV-10 LUMINAIRE

- *Recommended for* **Effective, Economical Lighting of Residential and Suburban Streets . . .**

Extensive tests have shown that these new HOLOPHANE Refractors present many unique advantages for residential street and property lighting. They offer the stability of acrylic plastic, provide great resistance to impact breakage, are impervious to atmospheric conditions, minimize servicing costs. Their prismatic construction, precisely molded in the acrylic plastic, assures these added features: concentration of more light on required areas • more illumination per lighting dollar • longer serviceability • And, when set in the smart Westinghouse OV-10 Luminaire they lend an air of crisp, clean-lined modernity . . . Wherever quality and performance count—you can count on HOLOPHANE Prismatic Refractors.

For IES TYPE II Distribution,
with 175 Watt,
clear mercury lamps

For IES TYPE IV Distribution
with 175 Watt,
color improved mercury lamps

Holophane
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Lighting Authorities Since 1898

HOLOPHANE COMPANY, INC.

STREET LIGHTING DEPT., NEWARK, OHIO

THE HOLOPHANE CO., LTD., 418 KIPLING AVE. SO., TORONTO 18, ONT.

Municipal
P ublic
R elations

The City Tells Its Story

Edited by **PAN DODD EIMON**

In New York, Chattanooga and Minneapolis . . .

Municipal Public Relations Break Through City-Citizen Barriers

Not all the break-throughs in 1960 have been in the realm of the physical sciences. Municipal public relations has had its share of creative projects which have been carefully "counted down," launched, evaluated, and found workable.

None of these have been sent into outer space. They've been projects aimed at the down-to-earth problem of the city: how to find out what the citizen thinks and needs and how to tell him what the city is doing to satisfy his present and anticipated demands.

During the year, New York inaugurated an Information Service Mobile. Chattanooga created and packaged "Mr. Deeds," in slides and script. And Minneapolis caught the attention of 5,000 city leaders with facts on how modern zoning could improve the community.

At mid-year, Mayor Robert Wagner of New York City established a Mayor's Information Center in City Hall and inaugurated a traveling information unit, attached to the center. The purpose of the projects, the mayor said, was to make "more accessible information on the scope and nature of municipal services, how and where to obtain them," to provide citizens "direct channels" to present to the mayor specific complaints about municipal services and procedures for "prompt corrective action where warranted," and to enable the mayor to "maintain contact with a broad base of citizens so that government may be continually responsive to their needs."

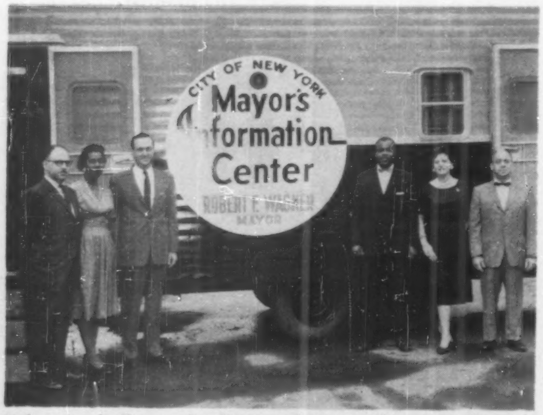
The mobile unit—a 36-foot trailer—is painted orange and blue, equipped with desks, chairs, a two-way radio-telephone, a supply of reference materials, and a staff of five veteran members of various city hall agencies. The mayor, in person, is often on hand when the mobile city hall moves into a neighborhood park for a couple of days to listen to people in the area and to dispense information.

Tried out for 30 days, the free-wheeling city hall proved so successful that it was put on a schedule and will probably become a permanent fixture of the city's public relations program.

The five staffers of the Information Service Mobile had six weeks of training by the Department of Personnel before taking over. Robert A. Low, Assistant to the Mayor, is in charge of the Information Center and the mobile service.

Mayor Wagner frankly borrowed the idea from PR-conscious Mayor Richard J. Daley who first used it in Chicago. Says Mr. Wagner, its use in New York "is part of the administration's continuing effort to

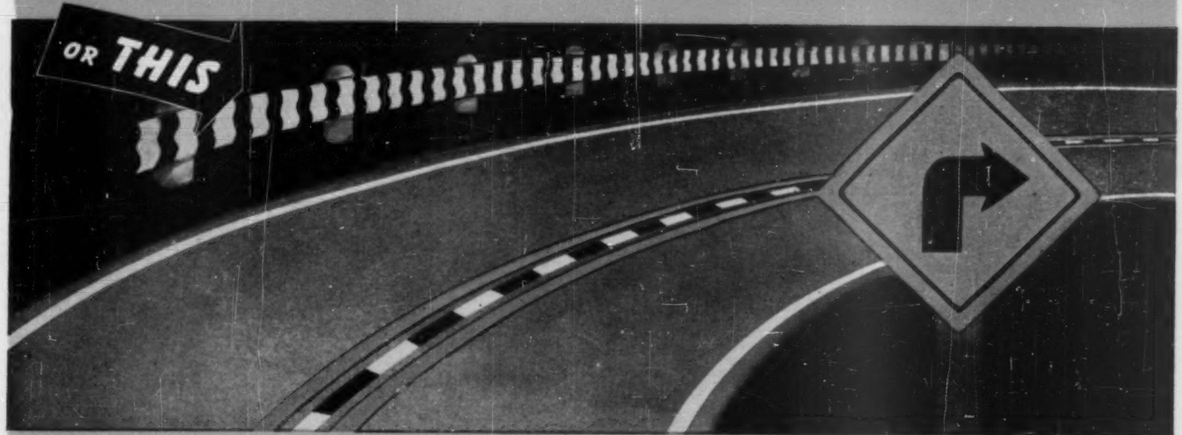
(Continued on page 125)



"The city hall on wheels" is what people are calling the mobile information and complaint center inaugurated by Mayor Robert F. Wagner, Jr. The 36-foot trailer stops at neighborhood parks for several days at a time to listen to complaints and to dispense information.

Mrs. Roana Hayes and Mrs. Mary Cocke of Chattanooga's Adult Educational Council worked out the "Mr. Deeds" program with Traffic Engineer Ralph Lewis and City Coordinator Marble Hensley. Here the four admire the pamphlet offering the slide-and-script show to civic groups.

DO YOUR TRAFFIC SIGNS LOOK LIKE...



FLEX-O-LITE

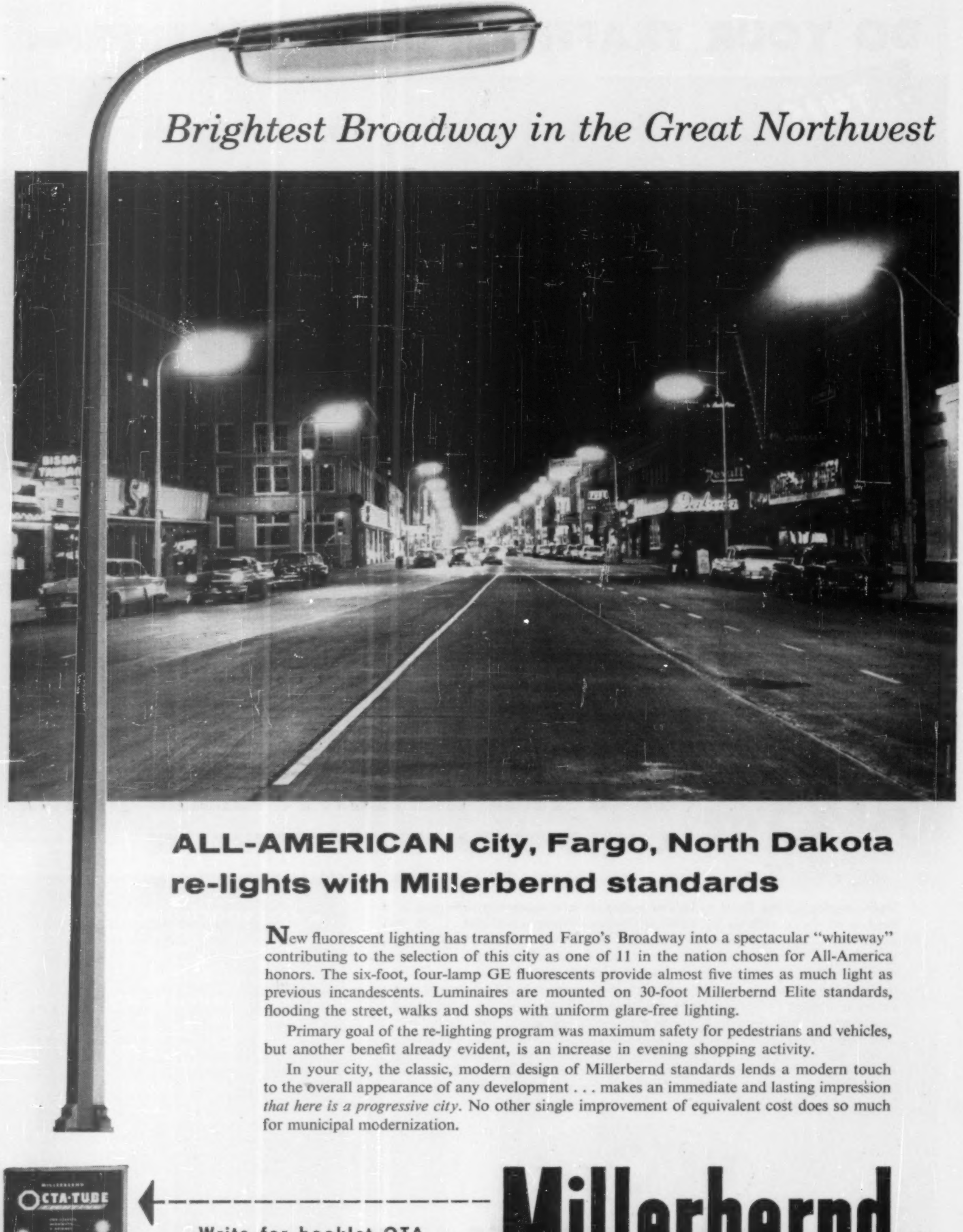
LEAD-FREE REFLECTIVE GLASS BEADS COULD MEAN THE DIFFERENCE

Signs employing the finest reflective materials are adversely affected in a number of ways, such as by moisture, thermal changes and dirt . . . as well as acts of vandalism, accidental breakage and normal wear and tear. Further, the sulphides in industrial fumes attack glass beads containing lead, causing them to turn dark, with a consequent loss of their reflectiveness and visibility. Maintaining adequate visibility through fair weather and foul for maximum safety is a *must.* To ignore this fact is bargaining with lives. So, it is just common sense to buy lead-free beads that won't turn dark. That's why street and highway engineers specify Flex-O-Lite Lead-Free Reflective Glass Beads—with full confidence in their maximum brilliance and lasting reflectivity throughout a longer life. Specify the beads proved best by test. Insist on Flex-O-Lite Lead-Free Reflective Glass Beads. Write for free, informative brochure.

FLEX-O-LITE

FLEX-O-LITE MANUFACTURING CORP.
8301 Flex-O-Lite Drive, St. Louis 23, Missouri
Flex-O-Lite of Canada; Ltd., P. O. Box 216, St. Thomas, Ontario, Canada • Paris, Texas
MAKERS OF DROP-ON • FREE-FLOWING
STANDARD • MILITARY • MOISTURE-PROOF • HIGH AND MEDIUM INDEX SIGN BEADS

- **#831 REFLECTIVE GLASS BEADS**—Best for white and yellow signs. Meet and exceed all test requirements . . . microscopic, acid, sodium sulphide, spherical content, gradation.
- **FREE-FLOWING REFLECTIVE GLASS BEADS**—Won't agglomerate. Contain no injurious waxes, oils or resins. Offer perfect adhesion to any suitable traffic bead binder. Economical.
- **TYPE H SAFETY SPHERES**—Approximately fifteen times brighter than standard highway beads. For reflectorizing guard rails, curves, bridge abutments, safety islands, etc. Offer maximum reflectivity at lowest cost.
- **FLEX-O-LITE FREE-FLOWING TRAFFIC LINE BEAD DISPENSER**—New, simplified. Affords years of trouble-free operation. Ideal for municipal and highway use. Attaches to any traffic line paint machine. Satisfaction guaranteed.
- Ask about our Sign Bead Applicator.



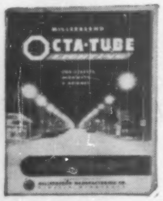
Brightest Broadway in the Great Northwest

ALL-AMERICAN city, Fargo, North Dakota re-lights with Millerbernd standards

New fluorescent lighting has transformed Fargo's Broadway into a spectacular "whiteway" contributing to the selection of this city as one of 11 in the nation chosen for All-America honors. The six-foot, four-lamp GE fluorescents provide almost five times as much light as previous incandescents. Luminaires are mounted on 30-foot Millerbernd Elite standards, flooding the street, walks and shops with uniform glare-free lighting.

Primary goal of the re-lighting program was maximum safety for pedestrians and vehicles, but another benefit already evident, is an increase in evening shopping activity.

In your city, the classic, modern design of Millerbernd standards lends a modern touch to the overall appearance of any development . . . makes an immediate and lasting impression *that here is a progressive city*. No other single improvement of equivalent cost does so much for municipal modernization.



Write for booklet OTA
Describes Millerbernd Elite Standards and four other modern styles. Shows new developments in fluorescent-type standards.

Millerbernd
MANUFACTURING CO.
WINSTED MINNESOTA

(Continued from page 122)

seek more effective methods to make widely known the municipal services available and what the city administration is doing to meet the problems created by the complexities of city living."

Mr. Deeds

Nineteen hundred and sixty has been a year of "getting to know the city" for thousands of happily surprised Chattanooga citizens. They've been guests or group members at city-wide presentations of a slide-and-script program, "Mr. Deeds Comes to Town."

A joint effort of the city and the Adult Education Council, the program consists of 110 colored slides and a full script. It tells the story of a young couple, the Deeds, prospective new citizens of Chattanooga. Via slides, they are shown carefully examining the community: its schools, recreational facilities, city library services, various departments of its government, traffic control, police and fire protection, the city's planning for the future, urban renewal projects, new freeways, and other signposts of Chattanooga's progress.

The Deeds are portrayed by a city police officer, a city stenographer, and two children "borrowed from citizens." Pictures were taken by City Traffic Engineer Ralph Lewis and the script was written by Mrs. Mary Cocke of the education council. The cash outlay by the City of Chattanooga was just $203 (projector $129, film and slides $50, and duplicate slides $24). Says Mr. Hensley, "the city's investment has been returned many times over in the public awareness and acceptance of municipal programs."

Chattanooga's Adult Education Council printed a brochure advertising the program, previewed the presentation at a special luncheon for community and club leaders, and has arranged showings. At year's end, more than 50 civic clubs will have seen "Mr. Deeds" and thousands more will have met him over WDEF-TV.

Other Techniques

The Minneapolis Planning Commission has used three information techniques to educate five thousand civic, business, and labor leaders. The goal: "to help them understand more fully how modern zoning can help make Minneapolis a better place . . . to live and work."

The planning commission developed a pamphlet, "You and Modern

(Continued on page 129)

PLAN *Low-Cost* BRUSH DISPOSAL–
PLAN ON A FITCHBURG CHIPPER

FAST... ECONOMICAL... SAFE

Plan on *low-cost* disposal of trimmed branches, whether it's for a tree company, utility, highway department, a city, or a park department—plan on getting a Fitchburg Chipper.

This well-engineered and rugged machine turns brush into easy-to-dispose-of chips, at very low cost. Only the Fitchburg Chipper has an exclusive, patented Feed Plate which automatically adjusts for any size brush up to its rated capacity, making it possible to chip large or small material with ease.

This Spring-Activated Feed Plate reduces shock action and horsepower requirements since it permits chipping of larger size wood without extra power. The Feed Plate results in fast, efficient chipping without a heavy, cumbersome fly wheel. The smoother chipping action means lower maintenance, too, as well as greater crew safety.

This safety feature is important. "Because of the feed plate with its safety spring the men can't get hurt by any back-throw from the Chipper," explains the Superintendent, The Park and Shade Tree Commissions, Bridgeton, New Jersey.

Please send in the coupon for more information, and for copies of articles on chipping which appeared recently in leading publications. These feature articles describe five methods of brush disposal, and ten new ways to utilize "by-product" chips. Send for your copies, they are well worthwhile.

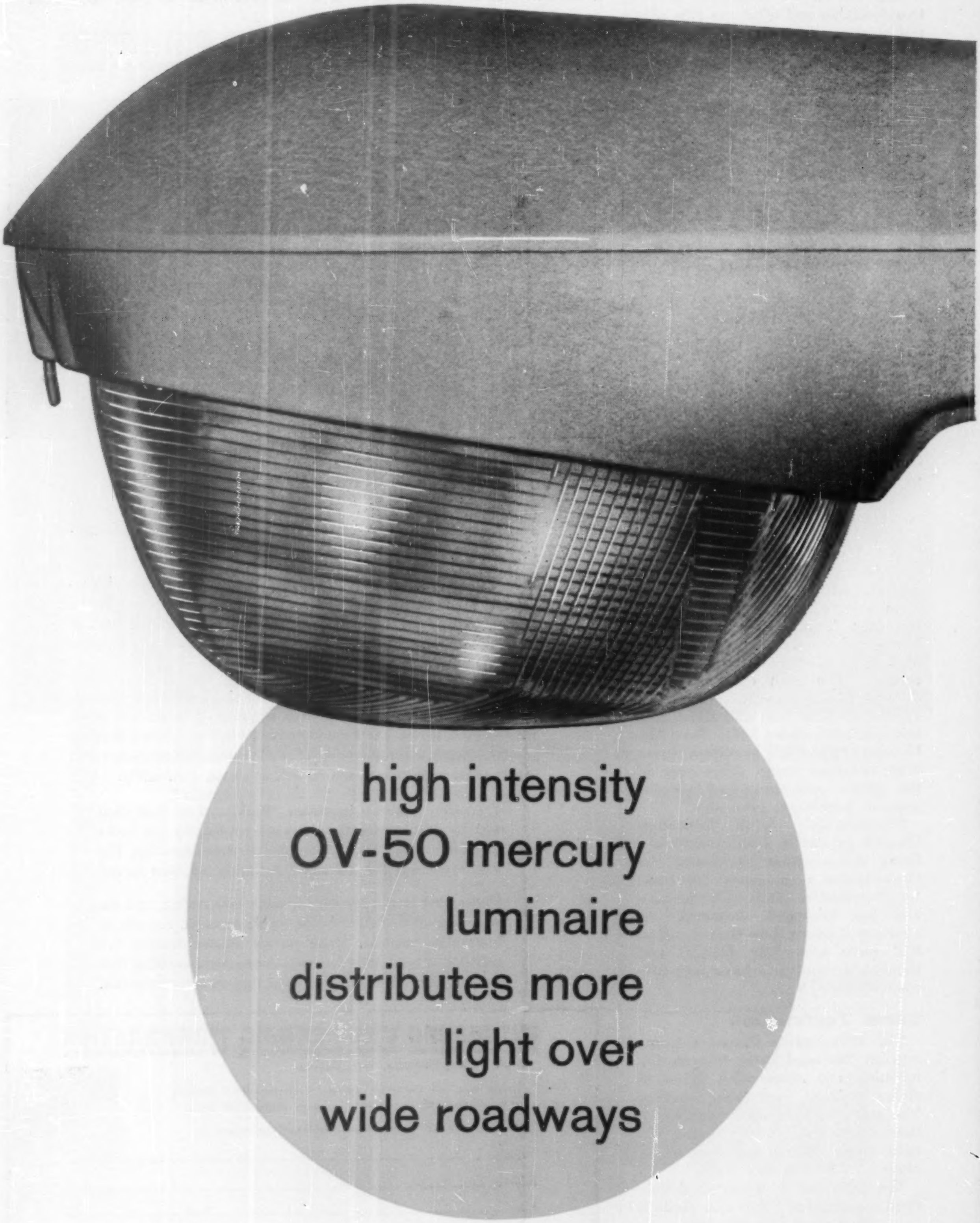
FITCHBURG ENGINEERING CORPORATION
Dept. AC-120, Fitchburg, Massachusetts

☐ Please send me important articles which describe 5 methods of brush disposal, and 10 new ways to utilize brush chips.

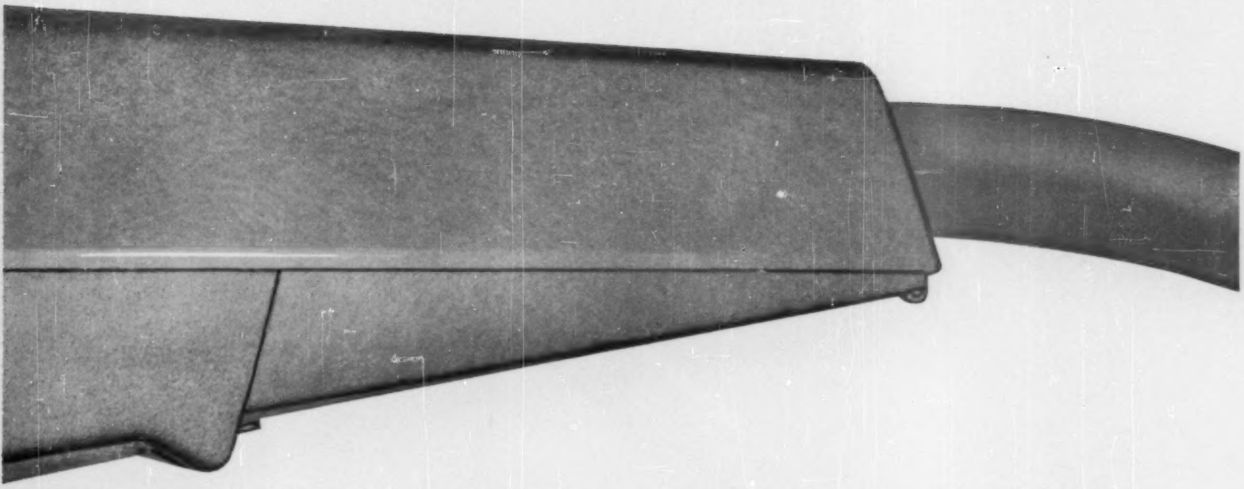
☐ Please send more information on Fitchburg Chippers.

Name____________________
Address____________________
City____________ Zone____ State________

New from Westinghouse



high intensity
OV-50 mercury
luminaire
distributes more
light over
wide roadways

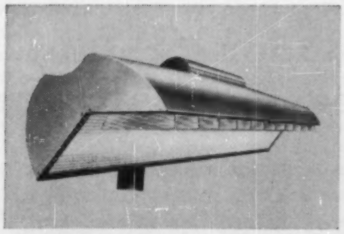


You need high-level lighting where traffic is heavier and faster and roadways are wider. Here's why the new Westinghouse OV-50 mercury luminaire is your best bet.

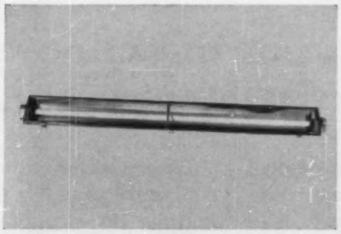
This good-looking unit, with external ballast, takes 700- and 1000-watt mercury lamps, clear or color improved. Boosting illumination intensities can be just a matter of changing lamps. And you get more light because a scientifically designed optical system directs a major portion of this extra light to the roadway surface where it is needed most.

Maintenance is minimized, too. With the new OV-50, the optical system is completely sealed—no dust, moisture or bugs can get inside. The die-cast aluminum housing has an attractive "hammer-tone" silver aluminum, baked enamel finish that's highly resistant to heat, abrasion and corrosion. The OV-50 fits standard poles and brackets, or davit poles with a minimum 7½-inch pipe tenion. Find out more about the OV-50 with either internal or external ballast. Contact your nearby Westinghouse representative or write Westinghouse Lighting Division, Edgewater Park, Cleveland, Ohio. Remember—you can be sure . . . if it's Westinghouse. J-04478

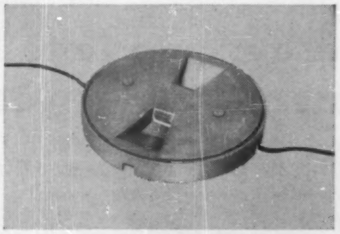
Westinghouse



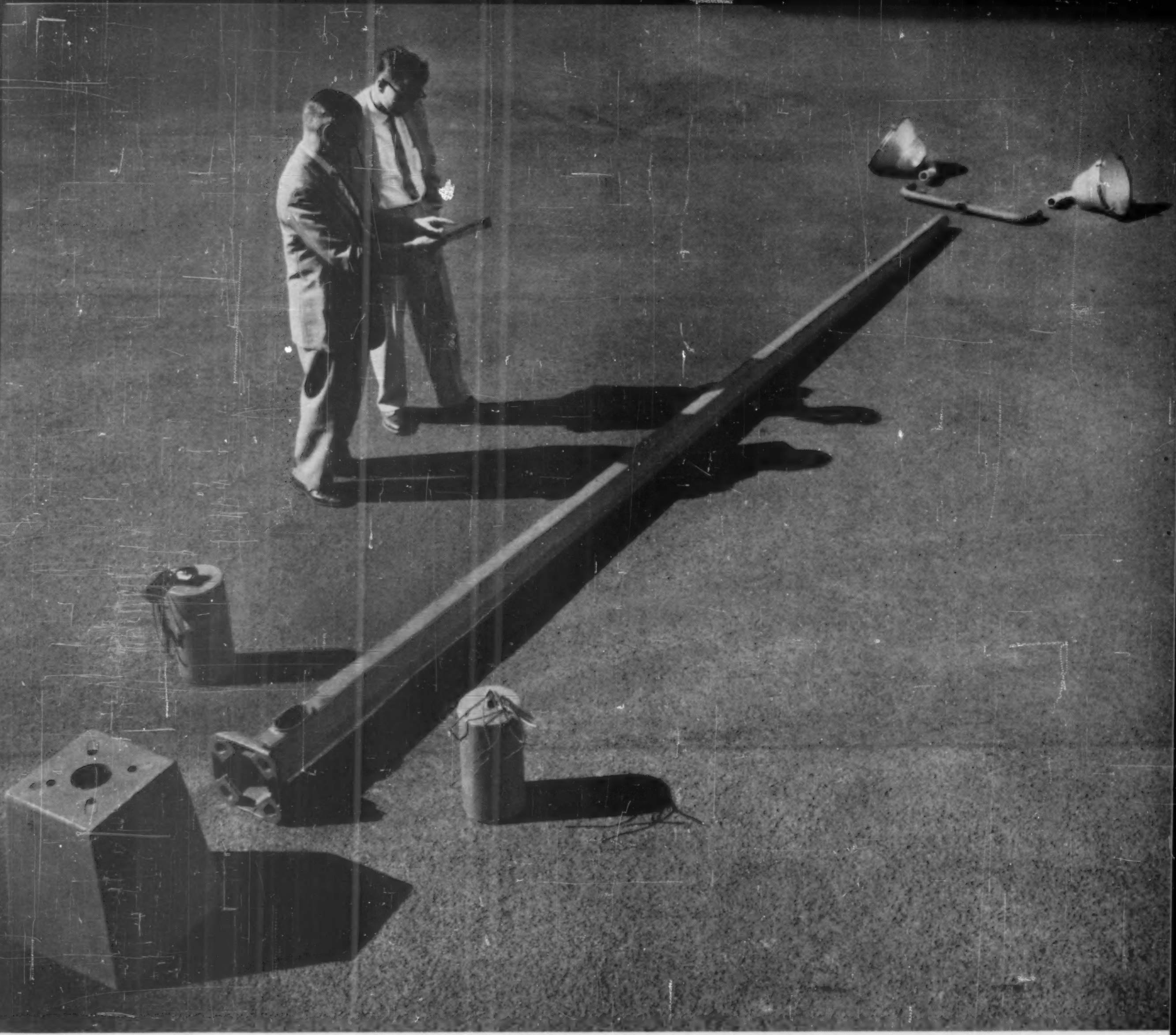
NEW WESTINGHOUSE FAN-COOLED, FOUR-LAMP "MAINSTREETER" gives you the benefits, prestige of fluorescent roadway lighting . . . economically. Designed to be located at the curb and mounted parallel to it, the trim "Mainstreeter" keeps dangerous glare out of drivers' eyes. Four fluorescent lamps, coupled with special reflector and refractor, mean more light more uniformly distributed (coefficient of utilization is often as much as 50% higher). A cooling system is thermostatically controlled to provide lamp cooling when needed.



NEW WESTINGHOUSE SIGN-PAK: Roadway directional signs, competing with adjacent illumination, must stand out if fast-moving drivers are to get the message. Answer: the exclusive Westinghouse Sign-Pak, incorporating two high-efficiency Sataliner reflector assemblies; in-line ballast compartments (with ballast); and extra-long leads. Completely prewired, preassembled for easy installation. And since Sign-Pak directs light upward from the sign bottom, the light can't bother drivers.



NEW WESTINGHOUSE RUNWAY LIGHT: Westinghouse makes a complete line of airport lighting and control equipment. This latest addition is the new inset light which solves the approach and landing problem of the jet-age aircraft. Utilizing a small, 45-watt quartz-iodine lamp, this rugged, disc-shaped unit mounts flush to, or no more than ⅛ inch above, the runway surface. Result: safer jet landings because of the nonblinding strips of light, visible under all weather conditions.



Revere's complete line of matched outdoor lighting equipment means peak efficiency and easy installation

Shown above are the components of a Revere outdoor lighting installation. Every component — pole, base, bracket, lights — is *perfectly matched* to every other component, so the completed installation is exactly right for the job. Components "fit" right to make installation easy, they are structurally matched for strength and balance, and "design-matched" to give peak lighting efficiency for the application.

Revere offers the widest selection of outdoor lighting equipment available from any single source. You can get on-time delivery of Revere fixtures for incandescent, mercury or fluorescent lighting, as well as hinged, rigid, separable poles and accessories. Ask your wholesaler about the advantages of specifying Revere equipment.

Write for catalog of Revere's complete line of matched outdoor lighting equipment.

Revere®
ELECTRIC MFG. CO.

OUTDOOR LIGHTING

Revere Electric Mfg. Co. • 7420 Lehigh Avenue • Chicago 48, Illinois (In suburban Niles)
Long Distance Phone: NIles 7-6060 • Chicago Phone: SPring 4-1200 • Telegrams: WUX Niles
In Canada: Curtis Lighting, Ltd., Leaside, Toronto, Ontario

(Continued from page 125)

Zoning," a slide show, and a series of zoning "previews" in printed form. All have been sent to the list of 5,000 key men and women, one a week, timed to precede public hearings on a zoning ordinance.

Belief that support for planning must be cultivated led Arthur Schwarz to invite third-graders to his St. Louis Plan Commission offices. The children came, asked questions, received a map of the city and a talk on planning.

Philadelphia has a Citizen Council on City Planning which acts as a PR arm for planning. This year the Council used its "Zoning Alerting Service" to inform people, via a series of pamphlets, about the contents of an important planning ordinance and its progress through the city council.

There's nothing new in crossing signs, but when the school intersections are marked with large letters saying, "Dear Crossing," and accidents there are cut to zero, it's worthy of note. This is what has happened in the City of Miami.

The "Dear Crossing" installation consists of pedestrian-activated signal lights; signal lamps painted in fluorescent red and orange, visible by day and night; and the signs.

Kirkwood, Mo., extended the time-honored open house to a full week of city hospitality for its citizens. Mayor William L. Berthold and the entire city staff worked on the project. It included a Wednesday evening open house at city hall and special invitations to citizens to come to the regular monthly council meeting held in that time.

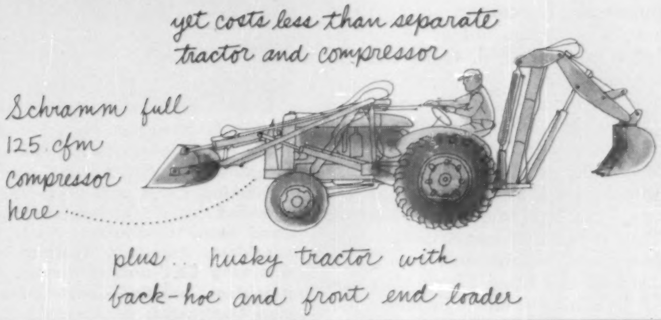
North St. Paul, Minn., achieved an eye-catching effect in its report folder by using a 16" sheet of paper, cut diagonally across the top. One side is printed in pale yellow, the other orange. Folded four times, the two colors create contrasting tabs identifying subjects covered in the report. Village Manager Orvil J. Johnson is "quite satisfied with the appearance considering the limited amount of money spent." Three thousand were printed and mailed with utility bills for $200! ◄◄

1960 Annual Index

Bound into the back section of this issue of "The American City" is the 1961 Annual Index, arranged according to subject and place.

HOW SCHRAMM HEAVY PNEUMATRACTOR CAN HELP YOUR CITY CUT COMPRESSOR AND TRACTOR COSTS!

❶ heavy Pneumatractor gives you two units in one


yet costs less than separate tractor and compressor
Schramm full 125 cfm compressor here
plus ... husky tractor with back-hoe and front end loader

❷ heavy Pneumatractor cuts operating costs

one man drives compressed air to any job
same man operates any air tool
same man sweeps hauls, loads, digs grades, etc.

❸ you eliminate

pushing
lost time
idle equipment
Pneumatractor is always busy!

❹ and here are price comparisons!

Tractor	$ 3,600
Loader	$ 2,250
Backhoe	$ 3,900
Schramm 125 cfm Compressor	$ 3,720
	$13,470

if bought separately at average prices

Schramm Heavy Pneumatractor . . . $12,421.50

Write for Catalog 5740. And see your nearest Schramm Dealer listed in the Yellow Pages.

Schramm PNEUMATRACTORS
Self-propelled Air Compressors
603 North Garfield Ave., West Chester, Pa.

Machinery Show Planned for '63

The Construction Industry Manufacturers Association (CIMA) recently signed a contract in Mayor Daley's office for 537,000 square feet of exhibit space in the International Amphitheatre at Chicago, Ill. Preliminary arrangements are being made for the Construction Equipment Exposition and Road Show, the largest indoor industrial exhibit in the world, to be held in February of 1963.

The co-sponsoring organizations are: the American Road Builders' Association, the Associated General Contractors of America, the International Road Federation and the Associated Equipment Distributors.

This exhibit of construction machinery and equipment, previously known as the Road Show, was last held in Chicago in February 1957, and was attended by over 67,000 industry visitors including 4,000 overseas visitors. ◄◄

Chicago's Mayor Daley (seated, center) officiates at the signing of the Road Show agreement. He is flanked by M. E. Thayer, manager of the International Amphitheatre (left) and Donald V. Buttenheim, president of the Buttenheim Publishing Corp. and president of CIMA. Standing, left to right, are: Boyd S. Oberlink, senior vice-president, Allis-Chalmers Mfg. Co., and chairman, CIMA Road Show Committee; Nello L. Teer, Jr., president, Nello L. Teer Co., and president, American Road Builders' Association; Julien R. Steelman, president Koehring Co., and chairman, International Road Federation; M. Clare Miller, president, San Ore Construction Co., and senior vice-president, Associated General Contractors of America; R. F. Newlin, president, Newlin Machinery Corp., and senior vice-president, Associated Equipment Distributors; Harry J. Kipke, president, Chicago Convention Bureau; and R. P. McKendrick, executive director, CIMA.

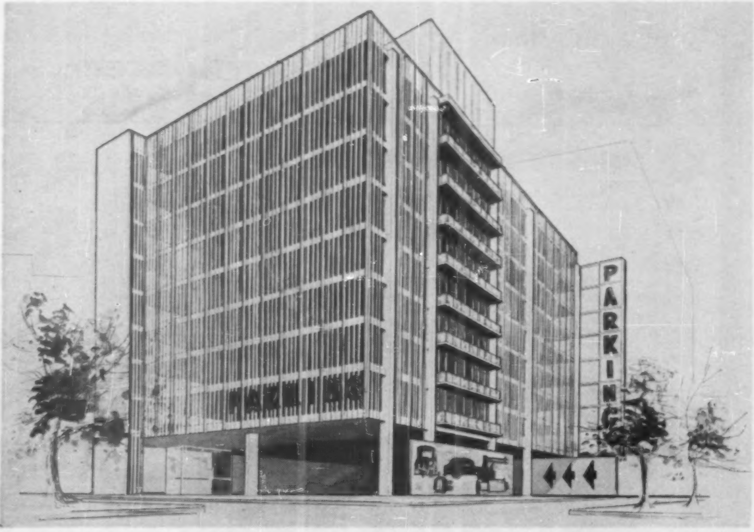
Automatic Garage for Downtown New York

A ten-level Minit Park automatic garage was started in July at Rector and Washington Streets, New York, and will be housing 210 cars by December 1960.

This is the first structure to be built under the revised Administrative Code of the City of New York which permits ten levels (or 75 feet) in concrete open-deck facilities that automatically lift a car, carry it into the cab of the elevator and place it in the assigned stall on its wheels. Two high-speed elevators travel horizontally and vertically and car-handling dollies do the job with only one man on each elevator.

Minit Park is built by the Alliance Machine Co. of Alliance, Ohio, and is sold by the Minit Park Garage Co., 420 Lexington Ave., New York 17, of which Harold P. Hallock is president.

The Rector Street project was developed by Ellis P. Eisenstein, president of Publix Parking Systems and is leased to Federated Garage Systems through Richard Merians, president of Dynamic Enterprises. ◄◄



This is an artist's rendering of the new automatic garage that is expected to accommodate 210 cars by New Year.

Six Years of Fogging

Insect pests have found Hearne, Tex., an unpopular place for six continuous years. The anti-insect campaign has been under the direction of the City Health Officer who conducts it continuously from early spring to late summer.

The chief weapon in the work is the city's Dyna-Fog machine mounted on a pickup truck. The machine applies Chlordane, DDT and other insecticides. In addition, the health crew also sprays liquid DDT in the alleys and sidewalks in the business district, using a machine mounted on a two-wheel trailer which is pulled by a pickup truck. ◄◄

The DUNCAN V.I.P.*

...*like having a* *POLICEMAN at every meter!*

Twenty-four hour a day protection to collected revenue can only be achieved by a meter specifically engineered to handle this tough assignment. Spectacular results prove the Duncan V.I.P. will affect substantial savings in parts costs plus increased revenue through effective vandalism control.

***Vault Insured Protection against vandalism**

Check these outstanding protection features:

- **TAMPER-PROOF BOLTED DOOR**
- **BURGLAR-RESISTIVE HOUSING**
- **PATENTED SEALED COIN BOX**

TWO HOUR TIME LIMIT
TIME EXPIRED

V.I.P. EXCLUSIVE

Submerged mystic-lock* increases security to the coin compartment. Non-exposure virtually eliminates malicious lock area vandalism.

*Trade Mark

DUNCAN PARKING METER

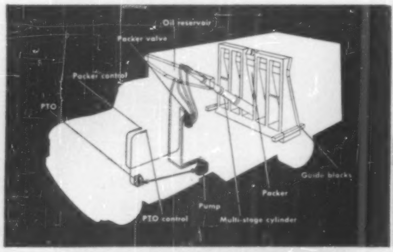
Division of Motor Products Corporation
835 NO. WOOD STREET CHICAGO 22, ILLINOIS

Hydro E-Z Packs save 4 hours per man per day!

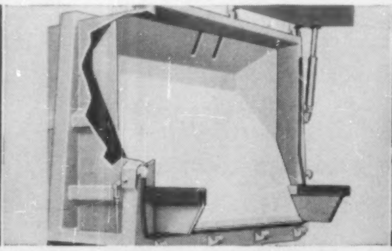
"Eight E-Z Packs handle the load 64 dump trucks carried"–

MR. C. E. COULTER
Peoria Disposal Co.

In Peoria, Ill., the Peoria Disposal Co. makes money with a fleet of 8 Hydro E-Z Packs against tough competition. Loads baled under 76,600 lbs. pressure in the world's most powerful refuse compactor average 5 to 8 tons compared with only about 1200 lbs. carried in the company's old non-compacting bodies. Company President C. Elmer Coulter reports that 8 Hydro E-Z Packs handle 4 times the load 16 dump trucks carried—and save 4 hours a man a day formerly lost on extra trips to the landfill! But see for yourself. See your Hydro E-Z Pack distributor or write us. We'll help arrange a demonstration and send you a free copy of "The Big Squeeze."



Simplest of all disposal bodies with the fewest working parts. No complicated chains, conveyors or whirling knives.



Bulldozer plow travels length of floor for compaction, beyond body for clean unloading of bale. No hoisting needed.

Lower cost with less depreciation since elimination of heavy and complicated mechanism decreases chassis requirements.

Hydro E-Z PACK

HYDRO E-Z PACK®

HYDRO E-Z PACK DIVISION OF HERCULES GALION PRODUCTS, INC., GALION, OHIO – U.S.A.

The Renaissance of American Compact Cars

Design features and lubrication requirements of the American compact cars

Between the early 1930's and 1959 there were no less than seven different compact cars manufactured. Among these were the American Austin (1930), the American Bantam (1937), the Crosley (1941-48), the Willys American (1941), the Henry J (1950-51), the Hudson Jet (1953-54) and of course the compact Plymouth Wayfarer which was offered briefly in 1949 and 1950. Aside from these public presentations, several manufacturers have designed compact cars and brought them to the prototype stage. Chrysler reached this point during the early 1930's as did Chevrolet during the latter part of that decade.

While much has been written regarding the reasons for the present acceptance of the compacts, little has been said regarding their previous failures. Obviously, previous market conditions were not "right." The contributing factors to this condition of "rightness" are lodged in our previous economy and living habits. During the early thirties the present trend to "suburbia" had not yet materialized and public transportation was adequate to handle the daily chores of commuting, shopping, etc. The community was compact and, to many, personal transportation was a luxury. While many of these factors began to change after World War II, the demand for automobiles ran so far ahead of the supply that almost any kind of a new car could be sold. Economy of operation, size, handling ease, etc., were not dominant factors in determining public acceptance.

By 1955 the trend to suburbia was well advanced. Public transportation was unable to meet the challenge economically. A car ceased to be a luxury, parking problems became acute and many found that a small car could serve as well as a large one. This thinking started in 1956 when the first upswing in the sale of the compact American car, the Rambler, and of foreign cars became apparent.

Economic Factors

As more people became acquainted with the smaller cars, the economic factors of operating costs, overhead, and depreciation also began to receive attention. By the end of 1959, the total sale of the American compact and imported cars amounted to slightly more than 15% of all cars sold in the United States.

Nash (before the merger with Hudson which created American Motors) was the first to benefit from this trend. While Nash had introduced a compact car, the Rambler, in 1950, its sales were unspectacular. However, in 1955, this car was redesigned in its present form in time to take advantage of the full effect of the change in public attitude toward compact automobiles.

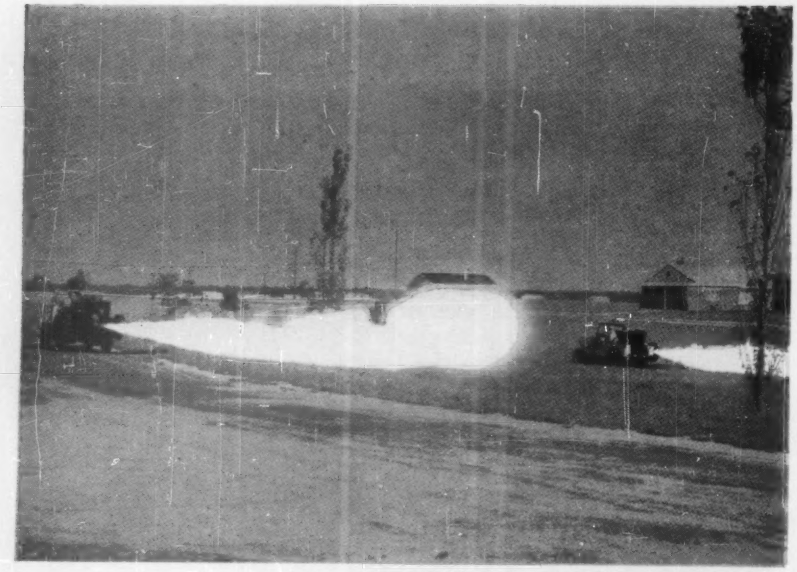
Studebaker was next to move in this direction with the introduction of the Lark which was fitted with either an in-line six or a V-8 engine. This car was also greeted with enthusiasm and did much to spark the present entrance of the "Big Three" into this field. During the Fall of 1959 and early Spring of 1960 the latest of the compacts manufactured by Chevrolet, Chrysler and Ford were introduced. Initial sales figures indicate that these offerings will also be well received by the American public. The effect of these latest offerings on the sale of foreign cars has not yet been determined. However, it appears that compacts are here to stay since even more entries are being planned.

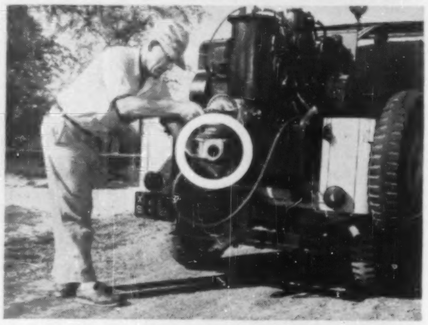
What was actually desired in the engines of these compacts? The major criterion was more gasoline

(Continued on page 134)

GENERAL SPECIFICATIONS

Manufacturer and Make	Wheel Base (Inches)	Length Over-all (Inches)	Width Over-all (Inches)	Curb Weight (Lbs) (4 Dr Sedan)	Weight Distribution Front / Rear (%)	Tire Size (Std.)	Tire Inflation Press. Cold Front / Rear (PSI)
American Motors Corp.							
Rambler-6	108.0	189.5	72.2	3038	54.5/45.5	6.40 x 15	24/24
Rambler Rebel V-8	108.0	189.5	72.2	3402	56.9/43.1	7.50 x 14	24/24
Rambler American	100.0	178.3	73.0	2614	53.0/47.0	5.90 x 15	24/24
Chevrolet Motor Div., GMC							
Corvair	108.0	180.0	66.9	2375	37.5/62.5	6.50 x 13	15/26
Chrysler Corp.							
Valiant	106.5	183.7	70.0	2725	55.2/44.8	6.50 x 13	24/24
Ford Motor Company							
Comet	114.0	194.9	70.4	2540	52.5/47.5	6.00 x 13	24/24
Falcon	109.5	181.2	70.0	2395	53.7/46.3	6.00 x 13	24/24
Studebaker-Packard Corp.							
Lark VI	108.5	175.0	71.4	2732	53.7/46.3	5.90 x 15	24/20
Lark VIII	108.5	175.0	71.4	3091	58.4/41.6	6.40 x 15	24/20





Fogging with LETHANE 384 *in Cape May County, New Jersey.*

HEAT-STABLE
LETHANE 384 *is unaffected by high temperature as it passes this critical hot zone on the fogging machine.*

Most effective knock-down agent for fogging...

LETHANE 384

Anyone faced with the problem of controlling mosquitoes . . . and the responsibility of using public or private funds to accomplish it . . . should be totally familiar with LETHANE 384. Highest percentage of knock-down and kills is assured when LETHANE 384 is used as recommended in fogging concentrates and adulticiding sprays . . . alone, with DDT or with malathion. Be sure your mosquito control program is built around economical, heat-stable LETHANE 384. Write to our Sanitary Chemicals Dept. for complete information.

Chemicals for Industry
ROHM & HAAS COMPANY
WASHINGTON SQUARE, PHILADELPHIA 5, PA.

LETHANE *is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.*

(Continued from page 133)

mileage. But for sales reasons, it was desirable to maintain a reasonable car performance in terms of acceleration and top speed. It must be recognized that, with a given car design and weight, as the gas mileage or economy is increased, the car performance will decrease. Therefore, a compromise was reached in order that it might operate at better than 22 miles per gallon of gasoline and still perform reasonably in terms of top speed and acceleration.

What type of engine should be used? The interests of economy could be best served by a four-cylinder engine. However, this would inhibit the acceptance of a new American automobile. Therefore American manufacturers preferred the increased cost and weight penalties of a six-cylinder design. There are two exceptions: Rambler Rebel and Lark VIII, both with V-8 engines. Actually economy rather than performance is a dominant sales factor.

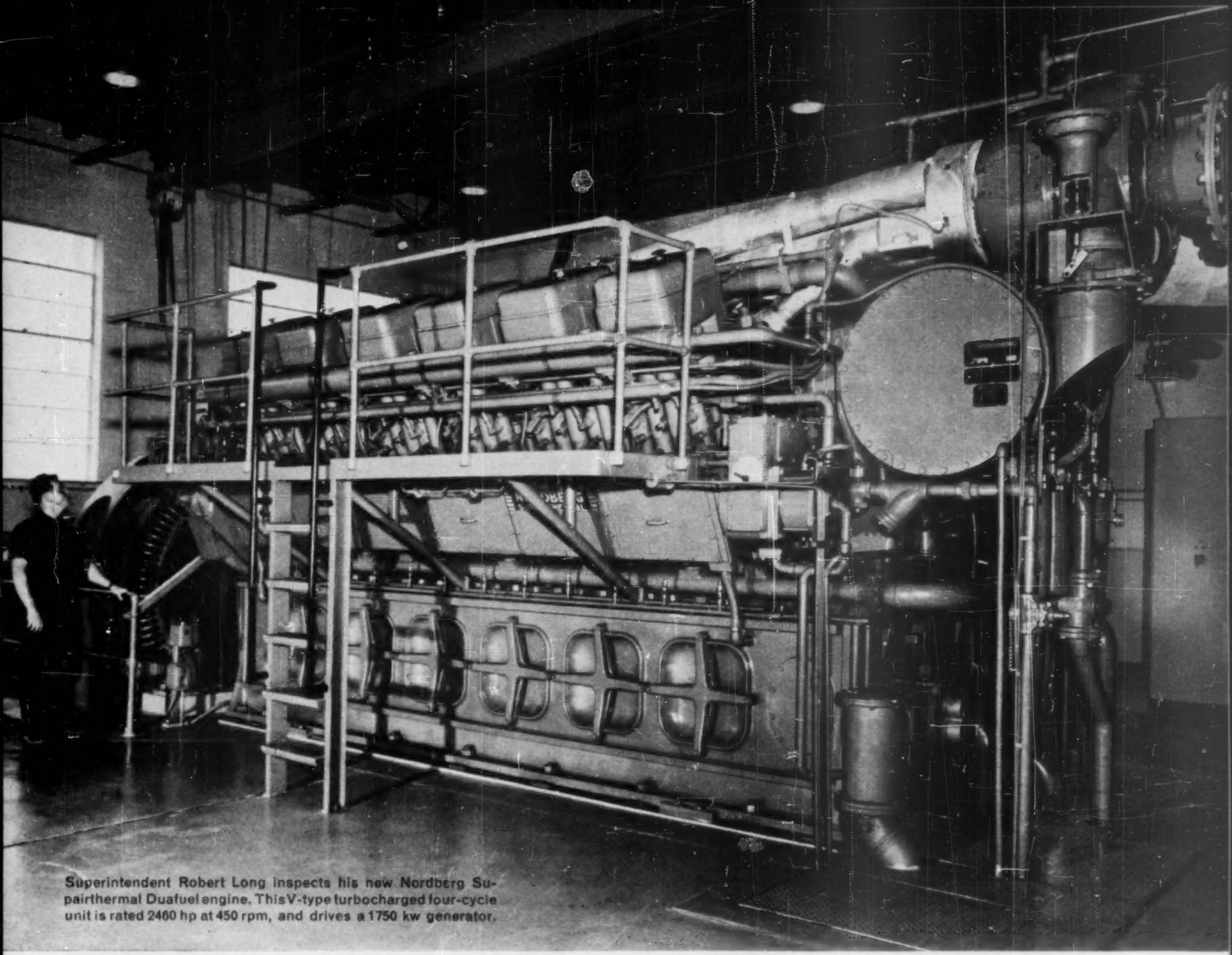
All of the cars except the Corvair have the engine placed in the front of the vehicle. While the American-manufactured rear engine car is a novelty on the motoring scene, most of the features embodied in this design have been in use in Europe for many years. All the current compacts employ full pressure lubrication. All of the engines use or have available oil filters of either the full-flow type or the partial-flow type.

The compact cars are becoming an increasing factor on the American automotive scene. Their engineering features are being widely accepted by the automotive public and by municipalities. ◄◄

Editors to Judge Engineer's Award

The editors of two of the Buttenheim publications, William S. Foster, of THE AMERICAN CITY, and William Quirk, of *Contractors and Engineers,* have been named to a jury of judges by the American Society of Civil Engineers to select the outstanding civil engineering achievement award of the year.

Other editors appointed to the jury include: James I. Ballard, *Western Construction;* Waldo G. Bowman, *Engineering News-Record;* W. A. Hardenbergh, *Public Works;* H. W. Hunt, *Civil Engineering;* Harold J. McKeever, *Roads and Streets;* Henry Perez, *Construction Methods.* Mr. Hunt will serve as chairman of the jury. ◄◄



Superintendent Robert Long inspects his new Nordberg Supairthermal Duafuel engine. This V-type turbocharged four-cycle unit is rated 2460 hp at 450 rpm, and drives a 1750 kw generator.

NORDBERG DUAFUEL ENGINE

takes on 20% of load—saves over $1,700.00 in one month's operation at Quakertown, Pennsylvania

A new engine is leading the steam-diesel team at the Quakertown, Pennsylvania, Municipal Electric Plant to the best production economy in the plant's long history. The engine is a Nordberg Supairthermal Duafuel unit rated 2,460 hp at 450 rpm.

Purchased originally to supplement other generating equipment during high-load periods or emergencies, the new Nordberg is now producing over 20% of the entire plant output.

Although still considered to be in its initial period of break-in and adjustment, the engine showed in one month how much can be expected of it. Running on a combination of natural gas and diesel pilot oil, the engine produced 417,873 kilowatt-hours, at a cost of only 5.31 mills per kwh. Based on an annual overall plant cost of 8.397 mills per kwh, the Nordberg Supairthermal engine, handling 20.7% of the load, showed a saving of some 10%, representing over $1,700 on the fuel bill for a single month.

Savings like this reaffirm Borough Management's belief in diesel power as the best means to keep up with Quakertown's growing demand for electricity. Significantly, the engine was installed in a new building large enough to house two additional units . . . another indication that Quakertown is already planning for the future.

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P960

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A CAR HAS BEEN DELIBERATELY DESIGNED TO CUT MAINTENANCE COSTS ...AUTOMATICALLY

The '61 Ford saves more than $84 a year per car on its "takes-care-of-itself" features alone!

The '61 Ford automatically reduces your routine maintenance expenses as much as 80%. With the chart below you can actually prefigure your savings right here and now. This chart uses 24,000 miles annually per unit as a fleet average . . . *your* savings may be even more.

OTHER FLEET CARS		1961 FORD	
CHASSIS LUBRICATION ($1.50 every 1000 miles)	$36.00	**30,000-MILE CHASSIS LUBRICATION** (Under normal driving conditions)	—
OIL CHANGES (5 qt. @ 50¢ every 2000 miles)	30.00	**OIL CHANGES** (5 qt. @ 50¢ every 4000 miles)	$15.00
MUFFLER REPLACEMENT (Including installation charge —once per year)	15.00	**DOUBLE-WRAPPED ALUMINIZED MUFFLER** (Lasts up to 3 times as long as ordinary mufflers)	—
BRAKE ADJUSTMENTS ($2.00 per adjustment—approximately every 6000 miles)	8.00	**NEW SELF-ADJUSTING BRAKES** (Mechanically adjust automatically for the life of the lining)	—
WAXING (Once per year @ approximately $10.95)	10.95	**FORD DIAMOND LUSTRE FINISH** (Never needs waxing)	—
TOTAL	$99.95	**TOTAL**	$15.00

FORD SAVES YOU $84.95

All prices based on average national cost

Add up these fleet-minded savings. Then let your Ford Dealer demonstrate the '61 Ford's built-for-people comfort features and remarkable ease of handling. You'll see why the '61 Ford has such a potentially high trade-in value . . . and why Ford is such a logical, economical choice for your fleet.

Beautifully built for economy and lasting value . . . **'61 FORD**

Houston's "Starlight Stairway"

. . . creates a sparkling Christmas spirit in the city's downtown area

By **DAVID R. HAWORTH**, Executive Assistant to the Mayor

If Houstonians cannot have a "white Christmas" without journeying north to the land of ice and snow, Mayor Lewis Cutrer reasoned that they should at least have a bright one. So two years ago he invited a group of 40 downtown businessmen to his office for a special meeting to discuss the possibility. The group represented all types of businesses, both large and small.

After a careful discussion, the businessmen voted unanimously to begin working on such a program. Since time was too short for a 1958 display, they agreed to begin planning for 1959. They also agreed that the decorations would be as fine as any in the nation.

Other groups in Houston had tried similar programs but had not achieved their goal because leadership had not succeeded in winning full local support. However, this program, enjoying the strong support of the mayor and the determined action of the businessmen, produced different results. Houstonians agree that it was the most outstanding success, for a Christmas decoration program, in the city's history.

The Christmas Decorations Committee contacted several companies which made decorations of this type and asked for suggested layouts and estimates of costs. The Committee unanimously chose the L. C. Williams Company of Houston and agreed upon a decorations program which they called "The Starlight Stairway."

Financing

To pay for the decorations, the committee charged the downtown merchants a *pro-rata* cost based on their front footage on Main Street. These costs included the decorations themselves, the task of hanging them, the electrical outlets, insurance and other miscellaneous items.

Since Houston has a large Christmas parade on Thanksgiving Day, the decorations cannot be put up until the day after Thanksgiving. With the cooperation of the Houston Public Works Department and an independent contractor, these decorations were in place on December 6th. The crews did most of the work during the late night hours to avoid the heavy downtown traffic.

At dusk, on the evening of December 7th, Mrs. Lewis Cutrer, Houston's First Lady, turned on the lights from a central switch in a special program covered by radio, television and the newspapers.

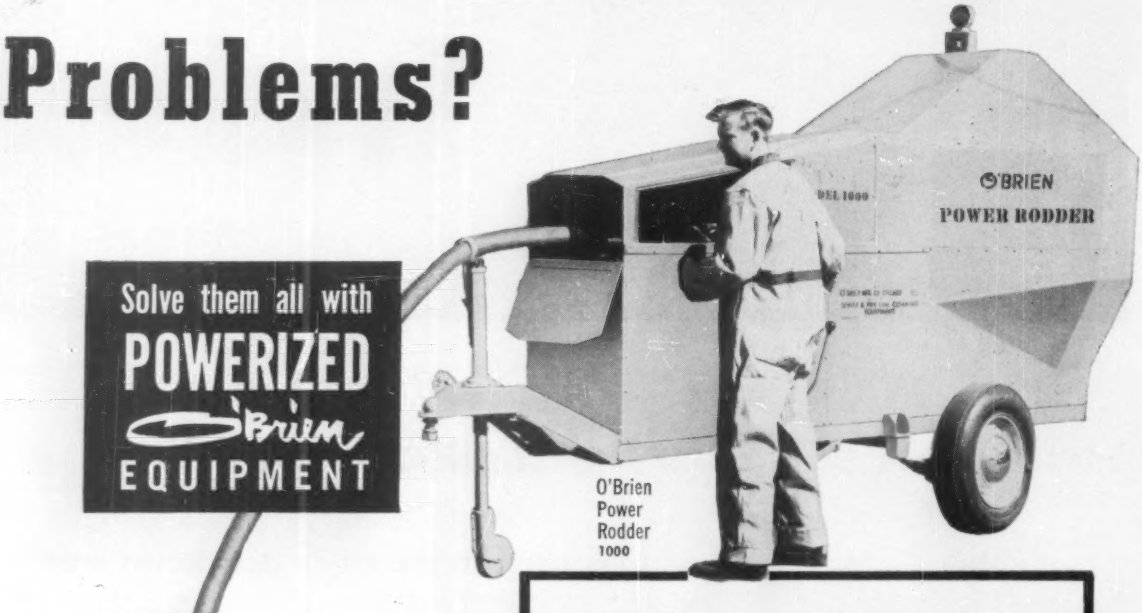
The decorations covered 12 blocks. They required 75 miles of gold-lacquered polished Alcoa aluminum foil; 3½ miles of messenger wire cable; 26,000 feet of electrical wire; 7,038 light bulbs which required a total of 188,554 watts.

The Christmas Decoration Committee supervises the installation of these decorations and removes and stores them. The committee has met several times this year to enlarge the program and refurbish the decorations.

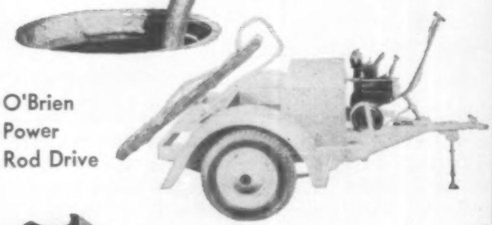
While the reason for the program is to create an atmosphere of happiness, optimism and good will during this significant season, nevertheless, the economic effect need not be ignored. Our merchants observed that the decorations resulted in nearly 28% increase in business over a similar period in previous years. Our investigations also showed that Dallas, with downtown Christmas decorations, enjoyed a similar increase in business activity, and Jacksonville, Fla., enjoyed some 22%. In contrast, San Antonio and Chicago, with no decorations, experienced no increase, and El Paso suffered a loss of 4%. ◂◂

what are your Sewer Cleaning Problems?

Solve them all with
POWERIZED
O'Brien
EQUIPMENT

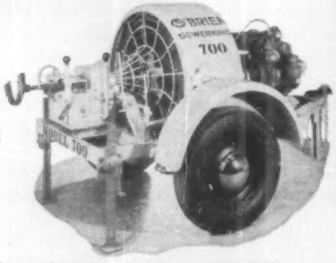


O'Brien Power Rodder 1000



O'Brien Power Rod Drive

Bucket Machine and Dumper



Sewerking Cable Machines

O'Brien makes a complete line of sewer cleaning equipment. Every unit is the exact answer to a specific cleaning requirement and reflects O'Brien's long experience and familiarity with the field. Economy, efficiency, and convenience of operation are built into every piece of equipment.

O'Brien Power Rodder:

matchless driving and pull-back power, unexcelled for bucket threading and general sewer maintenance. 1200 ft. capacity can be used with either 5/16 or 3/8-inch rod. Equipped with automatic safety throw-out, positive rod drive, and footage meter.

Bucket Machine and Dumper:

featuring exclusive O'Brien hopper. Bucket dumps into hopper; after repeated bucket travel, full hopper is dumped into truck. Use of hopper eliminates truck and traffic tie-up during cleaning operation which relieves truck for many hours of other duties while hopper is being re-filled. 9 hp., 16 hp., and 25 hp. models available.

Sewerking Cable Machines:

compact, powerful, economical cable rodder. Ideal for removing roots, grease, sludge and general sewer waste. Four Sewerking cable models available with capacities from 250 to 600-feet.

Rodding Equipment and Accessories:

O'Brien manufactures a complete line of powerized cleaning equipment accessories and universal replacement parts for all makes of sewer cleaning units.

Call or write for details or see O'Brien in action on your sewer problem. No obligation, of course!

Dept. AC1260
Nationwide sales and service
Demonstrations anywhere

O'Brien MANUFACTURING CORP.
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Catalog Data Essential In Dallas Purchasing

By **J. W. DORFF**, City Purchasing Agent

A purchasing department cannot operate efficiently without the proper library. We in Dallas, Tex., have been endeavoring to keep up with the many varied devices and commodities by two methods. One of these is the card record file, showing from whom the item was purchased, the date, the specification number and our cost. We have probably ten thousand cards and we still don't attempt to list all items. Secondly, we maintain a library. All pamphlets which are of interest to us, are filed in catalog holders. A cross-reference file lists the manufacturer's name and type of item.

We have in our library the latest reports of the American Society for Testing Materials and several other buying guides. We maintain a complete set of Sweets and also various books pertaining to laws governing purchasing, materials and material handling. Our many departments are constantly using the many catalogs in our library. Our buyers use these data in their daily purchasing.

J. W. Dorff

Our buying and clerical staff process one hundred purchases a day. Our annual volume amounts to eight to nine million dollars.

The Department of Purchasing also disposes of a great variety of items: real estate no longer needed, houses that have to be moved for right of way. The city's fleets of used automobiles and trucks are turned over to purchasing for disposal. Scrap metal sold is disposed of under contracts made quarterly to secure the best prices under a fluctuating price market. About ten auctions a year are held on unclaimed bicycles, confiscated items and stolen property that has not been claimed.

These items are released periodically to purchasing for disposal. Almost monthly auctions are held on impounded and unclaimed automobiles.

The department operates a centralized stationery and supply division and a printing plant. Four offset machines and two flat presses are utilized in the print shop along with a power paper cutter, binding tools and two mimeograph machines. Paper for offset printing and mimeographing is bought by the car load. Several hundred plates of regular stock forms are kept ready for instant use. A 42-inch ammonia machine for reproducing drawings along with a facsimile machine capable of reproducing any document are constantly in operation.

City of Dallas' Purchasing Department says that the only function it performs for the city is that of service. We try to give it.

In passing I would like to state that I feel that my 20 years in purchasing have brought rich rewards and personal satisfaction. In knowing today what I do know, if I had a choice to make beginning over again, it would still be in the purchasing field. ◄◄

1960 Annual Index

Bound into the back section of this issue of "The American City" is the 1960 Annual Index, arranged according to subject and place.

NCG® wherever emergency strikes...

Handy* Resuscitators automatically breathe when the breath of life is gone.

The Handy Resuscitator does *three* important things:

1. It automatically inhales and exhales, adjusting automatically the depth of respiration to the patient's lung capacity, for an adult, child or even *infant*.
2. It can be quickly switched to "Inhalation" to supply oxygen to be absorbed by the spontaneous respiration of the patient.
3. It provides sufficient suction as an Aspirator to remove obstructing material from the throat, such as water, mucus, etc.

"BE PREPARED" for drownings, carbon monoxide poisonings, heart attacks, electric shock, strangulation, asthma, asphyxia of the new-born.

Get complete information today. Phone or write now.

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ONLY *ROTO·PAC* HAULS AN EXTRA LOAD EVERY DAY **WITHOUT** EXTRA EQUIPMENT OR EXTRA PAY!

That's what the time saved on any route by ROTO-PAC adds up to, thanks to continuous loading plus continuous compaction.

SEE IT IN ACTION WITHOUT LEAVING YOUR OFFICE . . .

Color movies of the world's finest and fastest rubbish collection unit show the versatility of ROTO-PAC on both typical and unusual routes. Prefer a 'live" demonstration? A letter arranges it. No obligation, of course.

P.S. At the same time you'll see the ultimate in container systems—built to handle both manual and automatic loading of containers ranging from ½ to 6 yards from dock or street level.

CITY TANK CORPORATION
(A Unit of Hagan Industries, Inc.)
Culpeper, Virginia

Moving Walks In Tacoma

Residents of Tacoma, Wash., will be spared heart-taxing climbs up and down steep hills in the business area by the installation of moving sidewalks, an integral part of the revitalization of downtown. City voters approved a $875,000 bond issue to finance the project. Four pairs of speed-ramp passenger conveyors featuring special belting will carry pedestrians up and down four separate business blocks. The conveyors will be installed in lighted tunnels through existing buildings or in covered and protected areaways, where obsolete buildings are being demolished. The project will be finished early in 1961. ◄◄

Mechanized Cleaning Has 8:1 Edge

Mechanization has reached the sidewalks and boardwalks of Hollywood, Fla. New equipment upgrades the sanitation program while whittling back the work week.

Work that used to take eight or nine men one hour to do, now can be done with one man and the vacuum sweeper in the same time, releasing the extra labor for other types of work in the city. It eliminates the need for one of the city's big street sweepers to provide supplementary cleanup work.

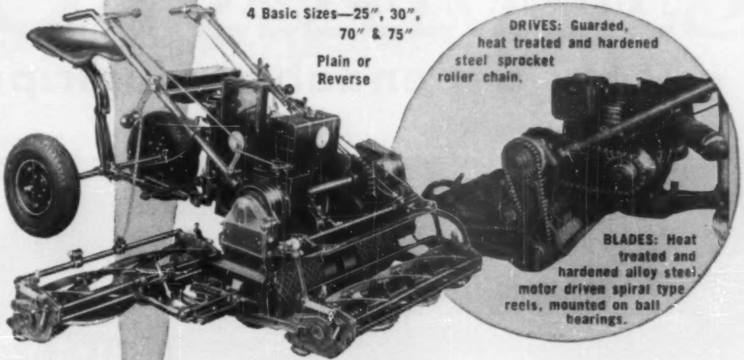
The machine, a gasoline-powered Vac-Master, would meet all of Hollywood's needs if it had some attachment that permitted picking up debris in shrubberies. Public Works Director William Wright feels that the mechanics in the city garage are resourceful enough to fabricate such an attachment, if none can be purchased. ◄◄

The equivalent of a nine-man hand-sweeping crew in Hollywood, Fla.

Once over lightly!

that's all it takes with a full chain driven

Locke POWER MOWER



2 Models—Single & Triplex
4 Basic Sizes—25", 30", 70" & 75"
Plain or Reverse
DRIVES: Guarded, heat treated and hardened steel sprocket roller chain.
BLADES: Heat treated and hardened alloy steel, motor driven spiral type reels, mounted on ball bearings.

Locke's exclusive "floating" action, "finger-tip" control and perfectly balanced, chain driven synchronized cutters assure

- Streakless cuts
- No rolled down or uncut grass

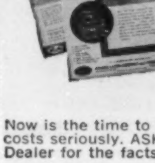
The entire mower travels on the cut grass and overhangs raised borders by ⅓, saving up to 50% hand trimming.

8 Reasons why Lockes are your best buy:

1. No belts to slip.
2. Overhangs raised borders by ⅓.
3. Turn at any angle, without raising units.
4. Gauge shoes prevent scalping; require less power to propel; less effort to manipulate.
5. Full floating cutters follow contour of the ground.
6. Side cutters raise vertically for storing and transportation.
7. B&S Motors are guaranteed and serviced by B&S, Locke and its dealers.
8. Riding sulkies attach in seconds.

Save time, money and energy! See your Locke Service Dealer now for a demonstration, or write.

Locke POWER LAWN MOWERS
1315 Connecticut Ave., Bridgeport 1, Conn.
A product of The Locke Steel Chain Co.


Send for these New Locke data sheets

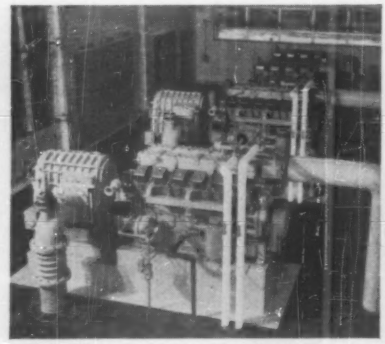
Now is the time to take your grass cutting costs seriously. ASK YOUR LOCKE Service Dealer for the facts, or write.

The Locke Steel Chain Co.
1315 Connecticut Ave., Bridgeport 1, Conn.
Locke Mower Div.

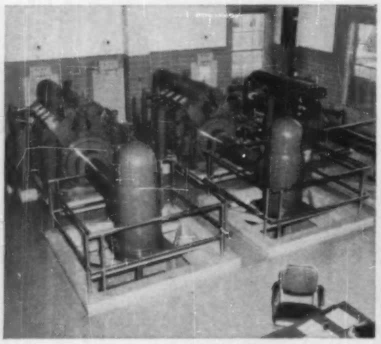
Gentlemen:

☐ We want a demonstration. Have your Dealer phone.
☐ Send your latest literature.

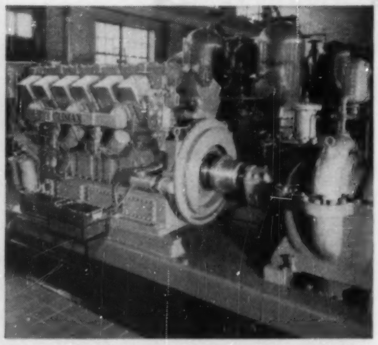
NAME ....
COMPANY ....
ADDRESS ....
CITY .... ZONE ...... STATE ....



Four Climax sewage gas engines powering blowers and pumps in a Michigan sewage treatment plant.



Three Climax engines, one Model K-67, and two V-85's driving vertical sewage pumps through right angle gears.



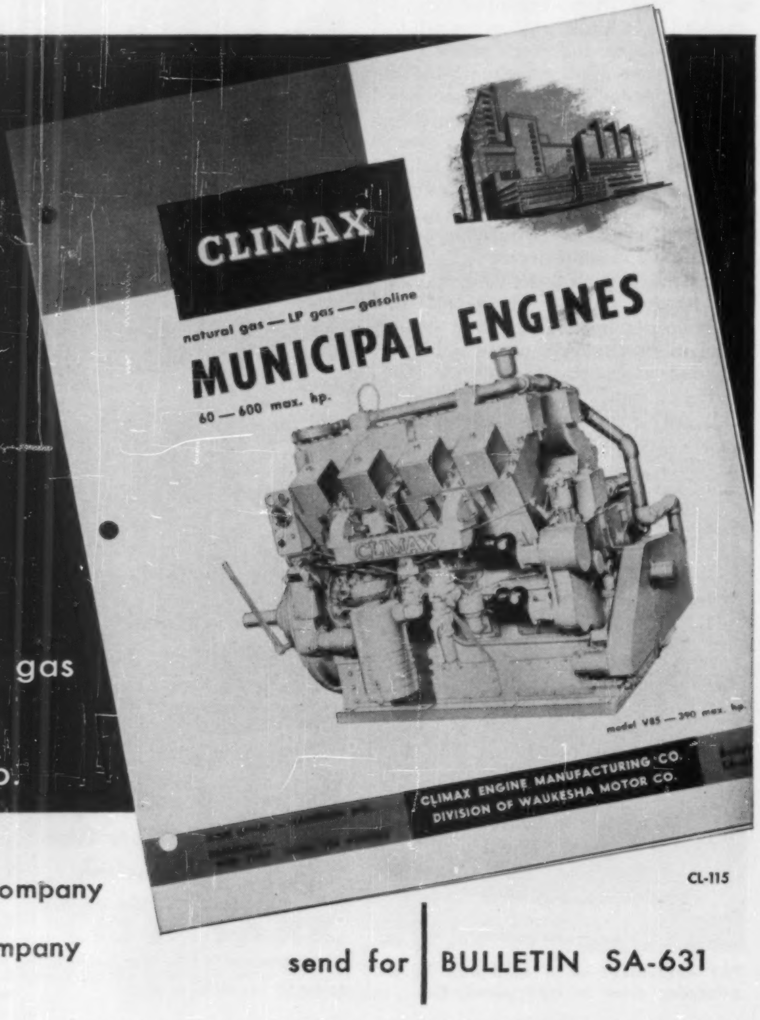
Model V-12 Climax engine in high capacity centrifugal pump service in a city water plant.

CLIMAX POWER

for dependable municipal plant service

Climax engines provide excellent low cost power for sewage and water treatment plants. These rugged, simply designed engines are engineered to give quick acceleration, withstand overloading, and perform longer with less maintenance.

natural or sewage gas
LP gas • gasoline
60 to 600 max. hp.



CLIMAX

natural gas — LP gas — gasoline

MUNICIPAL ENGINES

60 — 600 max. hp.

model V85 — 390 max. hp.

CLIMAX ENGINE MANUFACTURING CO.
DIVISION OF WAUKESHA MOTOR CO.

CL-115

CLIMAX
engine manufacturing company
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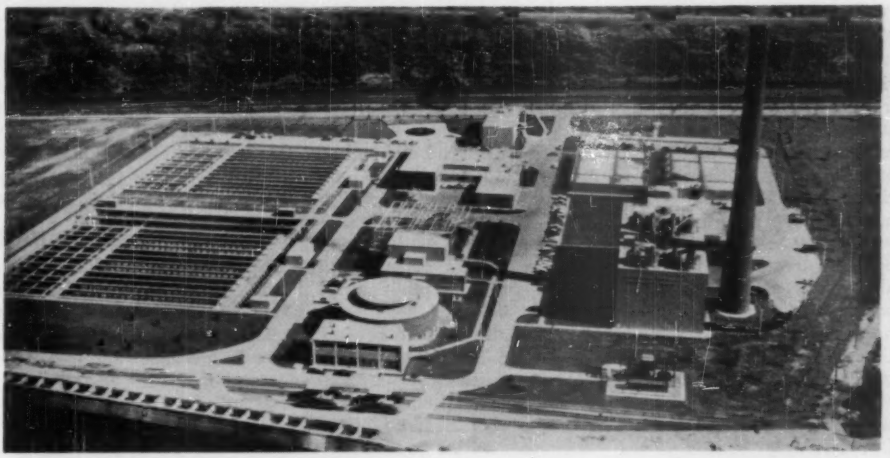
Factory—Clinton, Iowa

send for **BULLETIN SA-631**



The Allegheny County plant receives liquid wastes from more than 70 municipalities in the Pittsburgh area.

Metropolitan Sewerage Pacts—Part III

The Intermunicipal Sewerage Authority and a "Metro" Plan

By **WILLIAM S. FOSTER**
Editor
The American City

The term, "authority" attaches a relatively new meaning to a common word. By doing so, it illustrates the intriguing and vigorous way that language grows. As a method of local government, the word means an organization empowered to provide a local service usually performed by the municipality itself. While the organization is a creature of the local government or governments, it generally operates independently, not subject to review by the governments that created it or anyone else. In general it is expected to support itself through revenues charged for the service and not become a burden to the general tax fund. Its organization permits it to use the administration and marketing techniques of a private business and the tax advantage of local government.

For the governing boards of these authorities, the local governments generally appoint men known to have business and management skills. The appointing bodies usually surrender the right to remove the appointees unless they commit acts of malfeasance in office. The board members generally serve for limited terms which are non-concurrent. Thus a completely new board never takes over the management at any one time. As a rule, they serve without pay. Supporters of the authority method will list advantages such as these:

- **They are divorced from politics and thus can recruit and keep professional personnel and management practices.**
- **For their management boards they draw on the services of talented and able men who ordinarily would not become participants in local government.**
- **They permit establishing needed services outside the financial tax structure of the local government and thus its bonding capacity. Many times restrictive state laws prevent voting bonds within the general tax structure.**

Others point out what they feel are difficulties and shortcomings:

- **Being divorced from politics makes them immune to criticism or petitions about policy presented by the people served.**
- **Men appointed to these boards have a tendency to be unrepresentative of the people served and not responsive to their basic needs.**
- **Policies tend to consider primarily the financial health of the authority rather than the overall good of the community.**

The popularity of these author-

(Continued on page 144)

Seattle's Metropolitan Council consists of elected officials from both city and county governments.

(Continued from page 143)

ities is great. Sewerage is merely one of the services that they provide. They also are used to provide transit facilities, off-street parking, water supply, airport management, refuse collection and disposal and probably many other needed municipal services. They have been particularly popular in Pennsylvania where the state policy has been aggressively in favor of the abatement of sewage pollution but where at the same time state laws have made the construction of these purification plants through general taxation difficult. In that state, there is even a small statewide publication called *The Authority*.

Allegheny County, Pa.

Therefore it seems appropriate to examine the largest of these organizations in this state, the Allegheny County Sanitation Authority[1], serving the Pittsburgh area.

This organization, created in 1946, counts 70 municipalities as joint members. It has a governing board of five, of whom Pittsburgh appoints three and Allegheny County, two. Originally, Pennsylvania had ordered 100 municipalities in the county and more than 90 industries to stop polluting the streams, and the proposed organization anticipated embracing them all. However, the usual difference of opinion occurred and only 70 chose to participate, although this represents approximately 80% participation of the county.

The Authority has constructed a system of interceptor sewers and a central purification plant. However, the designers deliberately made no allowance for additional municipalities that might decide to change their opinions and join. Apparently the reasoning was that these recalcitrant communities had demonstrated a lack of cooperation in a move for the common good. Nevertheless, five cases have arisen where late comers have asked for service. In two, the municipalities financed the extra cost to the Authority of extending or enlarging its facilities to accommodate them, and thus were granted service at the same rate paid by "charter" members. In a third case, the Authority made the extension costing just under $1,000,000 and is assessing the additional charge over and above the regular charge. In a fourth case, a municipality is requesting that its connection be handled in the same manner, and in the fifth case, a group of municipalities have built their own connecting interception sewer to a point of connection with the Authority system.

Buffalo, N. Y.

The Buffalo, N. Y., Sewer Authority[2] does not exactly meet the definition of an intermunicipal sewerage pact. However, it does serve a small area outside the city and thus is somewhat metropolitan in character. It was created in 1935 to construct facilities that would prevent further pollution of the Niagara River.

It has a board of five members, serving without pay, appointed by the mayor. Each serves for a three-year term. The Authority has the rather unusual restriction of being limited to a total bonded indebtedness of $15,000,000 without submitting a proposal to a voter referendum. The Authority has the power to charge special rates to industries, depending on the strength of the sewage, and its charge based on

Small cities...

GR

SANITATION FOR THE NATION
PAK-MOR
MANUFACTURING COMPANY

Over 1,000 small but growing progressive cities are served by PAK-MORs. Why PAK-MOR? Well just like Devine, Texas, their PAK-MOR handles both residential and commercial refuse collection runs — keeps the city clean and neat. PAK-MOR's initial cost fit into their budget and its operation and maintenance costs are low. It can be completely taken care of by their own personnel and because of PAK-MOR's few moving parts, minor adjustments and repairs are no problem. That's why so many growing cities keep on growing with PAK-MOR... their profitable experiences through the years returns them to PAK-MOR with each expansion.

THIS IS
DEVINE TEXAS
Lets Keep It
CLEAN!

chlorine demand has become well known and frequently copied by others elsewhere.

The Authority also is unusual in that it gains over half its revenue from *ad valorem* taxes. The balance is raised by sewer service charges and other miscellaneous sources.

Rahway, N. J.

The Rahway Valley Sewerage Authority[3] does conform precisely to the example of an intermunicipal sewerage pact. It embraces nine municipalities in northern New Jersey. It is governed by a board of nine members, one from each municipality, all receiving a small fee for attendance at meetings.

Its actual organization resembles the "Joint Meeting" described last month (see pp. 169-176). Each municipality owns a share in the carrying capacity of the trunk sewer and purification plant, which it is free to sell if it wishes. If a municipality exceeds its flow right for ten separate days in any one year, it pays a surcharge currently amounting to $5,000 per million gallons per day.

The Authority embraces an aggregate population of approximately 250,000. All sewage flow is metered as it passes the boundary of the local municipality. If a municipality defaults its payment, the Authority is authorized to collect from individual property owners using the system. In general, the participating municipalities pay for their shares from the general property tax funds.

Linden-Roselle

The two New Jersey communities of Linden and Roselle illustrate a small authority embracing more than one city.[4] This Authority was organized in 1947 to provide a complete sewerage service for both communities. Its management consists of a four-member governing board. Three are from the larger city of Linden and one is from the Borough of Roselle. To date, the chairman always has been from the small city. All serve for five-year terms.

To establish the Authority, both municipalities passed parallel resolutions. It obtains all its funds from sewer service charges paid by Linden, Roselle and industry.

At one time, municipal officials approached the Authority, asking that it undertake incineration. However the members felt unable to do this under present terms of their incorporation.

Metro

One other development in this field has taken place in the Pacific Northwest. Seattle, Wash., and its surrounding municipalities recently established the Municipality of Metropolitan Seattle[5] by a vote of the people both inside and outside Seattle. The vote first failed, when officials in Seattle and the ten surrounding incorporated cities and towns proposed that Metro be responsible for sewerage, transportation and comprehensive planning. Apparently the public had not yet developed a taste for such wholesale metropolitan management of their local affairs, and kept these functions within their own community borders.

However, the measure passed when these same officials reduced the program to include only sewerage and sold it only as a clean streams-and-beaches measure. The fact that Seattle was undergoing an

(Continued on page 147)

...like little people...

OW

THIS IS
DEVINE TEXAS
Let's Keep It
CLEAN!

Today, refuse collection and disposal problems are becoming more involved. PAK-MOR's diversification has remained abreast of this trend. For now, there's a PAK-MOR for every refuse handling operation — Truck-Mounted PAK-MORs ranging in sizes to serve the smallest to the largest cities, LoBoye and Handi-Dump Trailers for heavy, long routes and operations using container systems. Large PAK-MOR Trailers for transfer and long-haul operations — and the world's largest compaction-type trailer — the PAK-MOR GIANT. Coming soon, PAK-MOR's new container system — the most revolutionary system devised to date. PAK-MOR, with distributors throughout the country would be pleased to discuss your refuse problems — no obligation, of course. Won't you ask us today?

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Midwest Swim Club pool by Chester, opened in Summer of 1960. "Z" shape provides two official racing courses, 25 meter and 25 yd., plus intermediate section and separate diving bay. Complete with Chester DIAVAC Filter requiring no filter room; deck-level; prewired, piped, and valved.

Any man specifying a pool, projecting its useful life in swimming years against dollar investment, could arrive at no choice other than Chester, the only pool of all-aluminum-alloy. Economical to install, and the first pool in history warranted against rust, cracks, and leaks.

- **Indoor and outdoor pools** in Olympic and A.A.U. standard sizes or custom-designed for clubs, municipalities, parks, hotels, institutions, and schools.
- **Most versatile.** Can be installed even on rooftops where weight factors preclude a pool of conventional type. Indoors, costs up to ⅓ less than traditional ceramic type.
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- **Costs least to maintain.** No cracks or leaks, virtually no maintenance. Full life actually unpredictable since the earliest, now in their eighth year, are as good as new.
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Yes, when architects, consulting engineers, and pool club committees consider these exclusive advantages, more and more they decide on Chester, the only all-aluminum pool, field-proved to give more swimming time per dollar than any other.

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BUILDING

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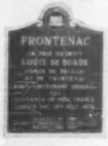

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MUNICIPAL MARKERS

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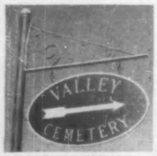
GOLF COURSE

GOLF COURSE PLAYGROUND MARKERS



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(Continued from page 145)

extremely dry period and the subject of water pollution was sensitive undoubtedly aided the favorable vote.

State enabling legislation permits Metro to accept responsibility for all the services mentioned, plus water supply and refuse disposal. The present organization can finance its functions by:

- **issuing revenue bonds**
- **issuing general obligation bonds after a proposition has been approved by a 60% vote in which 40% of those who voted in the last election participate.**
- **borrowing money from any corporate city or county when authorized by the Metropolitan Council.**
- **obtaining supplemental income from each component city and county based on its proportionate share of the total assessed valuation within the Metro borders.**

Interestingly enough, this Metro organization was named an All-America City in 1959, even though its only function is that of providing sewerage service. The award recognizes progress achieved through intelligent citizen action. ◀◀

---

[1] J. F. Laboon, Executive Director, Allegheny County Sanitary Authority, 3300 Preble Ave., Pittsburgh 33, Pa.

[2] Frederick W. Crane, General Manager, Buffalo Sewer Authority, City Hall, Buffalo, N. Y.

[3] Louis J. Fontenelli, Supervising Engineer, Rahway Valley Sewerage Authority, 616 Center St., Garwood, N. J.

[4] Charles O. Saunders, Superintendent of Facilities, Linden-Roselle Sewerage Authority, South Wood Avenue, Linden, N. J.

[5] Harold E. Miller, Executive Director, Municipality of Metropolitan Seattle, 152 Denny Way, Seattle 9, Wash.

EDITOR'S NOTE: This is the concluding installment surveying regional sewerage organizations. THE AMERICAN CITY will provide individual reprints of the series to those interested and will quote prices on the cost of orders in larger number.

1960 Annual Index

Bound into the back section of this issue of "The American City" is the 1960 Annual Index, arranged according to subject and place.

KENNEDY'S NEW

K-10 FIRE HYDRANT...

Combines lower installation and maintenance costs with maximum protection

The new KENNEDY K-10 Hydrant features "O" Ring seals, a weather seal and a pressure seal. These seals eliminate packing and assure clean, absolute protection of the inner working parts. "O" Rings are permanently installed and require no adjustment.

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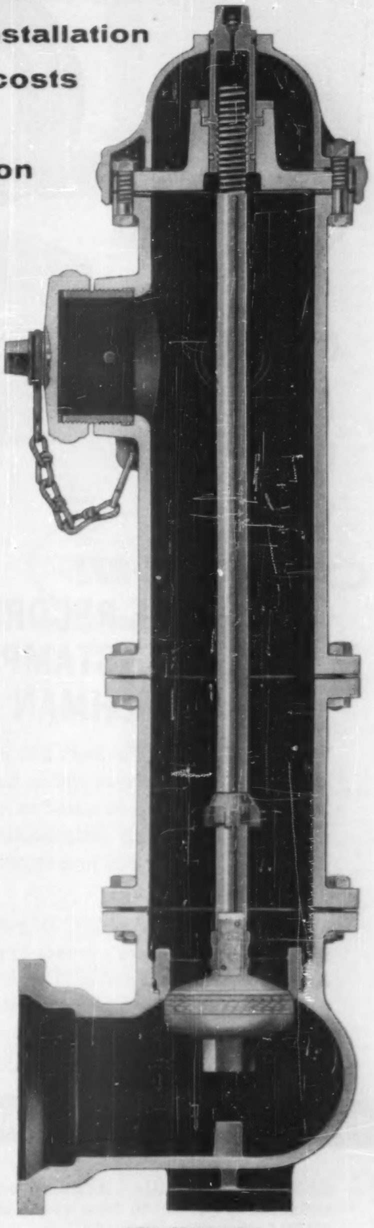
The K-10 Fire Hydrant conforms to A.W.W.A. specifications and is available in three sizes, 4, 4½, and 5 inch and in a variety of pipe end connections.



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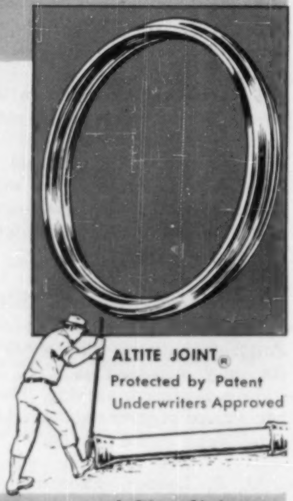

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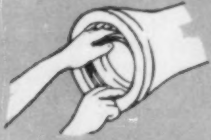
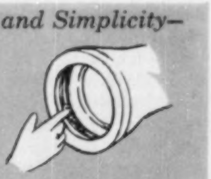
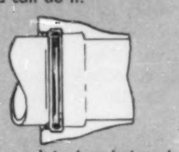


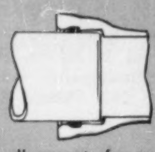
Insert Rubber gasket in bell end of pipe — you can't put it in wrong — A child can do it.



Wipe on a small amount of special lubricant—This reduces friction.



Insert plain beveled end of pipe — there are no grooves, ridges or tips on gasket to interfere with smooth insertion.



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ZONING AND PLANNING NOTES

Edited by NORMAN WILLIAMS, Jr.

Termination of Non-Conforming Open Repair Shop in Residence District

WASHINGTON. *City of Seattle* v. *Martin*, 342 Pacific (2d) 602 (Supreme (highest) Court, July 30, 1959).

In this case a vacant lot had been used for a number of years to repair heavy construction equipment; and, when the area was annexed to Seattle, it was zoned for residential purposes. The Seattle zoning ordinance has for many years contained a provision requiring that in residence districts "any non-conforming use of premises which is not in a building" be discontinued within one year. Three years after the annexation, the city instituted a lawsuit to enforce compliance with the above provision. The Court upheld the ordinance.

In the opinion, the Court first stated the issue succinctly:

> "The question is whether the ordinance is invalid because it requires the *termination* of a nonconforming use *in a period of one year* after the zoning change became effective.
>
> "We have not heretofore passed directly on the question of whether a city may take *affirmative* police power action to compel *termination* of a nonconforming use."

After a brief review of case law, the Court decided that the benefit to the public from the termination in this situation was substantial enough to warrant enforcement of the ordinance.

> "It appears, then, that the test in the instant case is whether the significance of the hardship as to appellant is more compelling, or whether it reasonably overbalances the benefit which the public would derive from the termination of the use of the vacant lot as a place for the repair of construction equipment. We are convinced that the answer should be in the negative.
>
> "In this connection it should be noted that the testimony shows that appellant is using the lot to repair trucks, bulldozers, and other equipment; that some of the work is very noisy, and, at times, the activities are carried on at night. The detriment to the public and to the owners of property now located in an area zoned as first residence property should be rather apparent without extended elaboration. It also seems reasonable that appellant's being compelled to forego this particular use of the lot should cause him little or no real hardship. The lot is vacant and is rented on a month-to-month basis. Appellant is not being required to tear down a building or to liquidate a large business. As noted heretofore, the ordinance allowed appellant a period of one year to effect the necessary changes in the operation of his business. In that time, it would not have been too difficult for him to have made other reasonably satisfactory arrangements for the repair of his equipment in a more appropriate area."

This decision adds another to the growing list of cases upholding the termination of non-conforming uses in residence districts. The business involved here did not include any substantial building or investment, so that it was a relatively easy case; yet the mood of the opinion reflects the present striking trend to uphold such provisions.

Additional Permitted Use in Residence Districts

NEW YORK. *Delwood Diary Co.* v. *City of New Rochelle*, New York (2d) 374, 165 North Eastern (2d) 566, 197 New York Supplement (2d) 719 (Court of Appeals (highest court), March 3, 1960).

NEW YORK. *Application of Faith for Today*, 194 New York Supplement (2d) 708 (Supreme (lower) Court, Nov. 18, 1959).

In the *New Rochelle* case, a coin-operated milk-vending machine was installed in the basement of an apartment house located in a "restricted residence" district; and the legal question was whether this was permitted as an accessory use, "customarily incident" to the permitted uses in such districts. The Court held that such a machine was not excluded from this category of permitted use because of the novelty of the custom. The opinion emphasized the improbability of adverse effects on the neighborhood, and the importance of adjusting zoning regulations to changing methods of doing business.

> "the use of a milk vending machine is but a different method of doing a traditional service for a householder. It is a common experience that new times bring not only new problems but new ways and means of dealing with old ones. To illustrate, automation is now being turned to as a means of reducing labor costs not only in the industrial and commercial field, but also in the domestic. The presence of a milk vending machine, such as the ones used here, in the basement of an apartment building which is not accessible to the general public can have little, if any, adverse application to the character of the residential neighborhood. It is not commercialism such as ordinarily disturbs the quiet and peaceful enjoyment of the home but, rather the convenient substitute for the route man. It is a device designed to perform "a use customarily incidental and subordinate" to the normal enjoyment of an apartment house."

While the general philosophy of keeping up with the times is admirable, its application to a regulation phrased in such traditionalist terms is unusual and ingeniously managed.

In the case of "Faith for Today," a non-profit Bible education group acquired a dwelling in a residence district in Forest Hills, New York City, and sought permission to set up a Bible classroom, chapel, storage room, and printing shop. The proposed operations were to include considerable modern office machinery together with a small printing press. The organization produced nationally-broadcast television programs, and conducted a correspondence course on the Bible and "a consultation service by mail." The legal question was whether the proposed operations were permitted as philanthropic and eleemosynary uses; and the lower Court held not, stating that "it does not seem probable that they were intended to authorize building a factory in a residence district."

As long as the regulations indicating additional permitted uses in residence districts are phrased in such general terms, the decisions as to what uses are in fact intended to be included will tend to be left to the courts. It is of course sounder legislative policy to make decisions consciously, in the light of the community's local development objectives, by writing more specific language in the ordinance to include (or exclude) the most frequent types of establishments involved. This is particularly true, and relatively easy, for accessory uses and home occupations, where a dozen more or less typical fact situations keep recurring. However, it would be much more difficult to define in detail the desirable types of non-profit and philanthropic institutions.

1960 Annual Index

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"Void For Vagueness"

NEW YORK. *People* v. *Meola* 7 (2d) 391, 165 North Eastern (2d) 851 (Court of Appeals (highest court) March 3, 1960).

CALIFORNIA. In re *Newbern* 350 Pacific (2d) 116 (Supreme (highest) Court, March 8, 1960).

In the New York case a motorist on the New York Thruway was convicted of not dimming her head lights as another automobile — unhappily for her driven by a state trooper — approached coming from the opposite direction. Under the statute involved, the offense consisted of operating headlights "so that dazzling light does not interfere with the driver of the approaching vehicle;" and defendant argued that this language was void for vagueness and thus unconstitutional.

In the opinion, the statutory language about "dazzling light" was interpreted to mean the operation of headlights on high beam; and it was emphasized that the offense involved an objective test, the effect on the operator of the other vehicle. The statute was therefore held to be sufficiently "definite, clear and positive" to give unequivocal warning to citizens of the rule which must be followed; and thus to satisfy the constitutional test.

In the *Newbern* case, the California Court held that a statute imposing punishment for being a "common drunkard" was void for uncertainty.

In legislation implementing planning, and particularly in the text of zoning ordinances, the question often arises whether the regulations involved are clear enough to satisfy the constitutional rule against statutes which are "void for vagueness."

Cases involving this rule are relatively rare, and so a decision on the point from a major court is of some interest

LEGAL NOTES AND DECISIONS

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Charles S. Rhyne, General Counsel

Annexation—Authorization Granted City

In action by city for authorization to annex surrounding contiguous area, held evidence sufficient to prove annexation reasonable and that city had ability to furnish normal municipal services. *City of Fulton* v. *Dawson*, 325 S.W.2d 505 (Mo. App., June 1, 1959)

Assessments for Streets Upheld

In action to set aside proposed street improvement district, where plaintiff did not object in timely manner and there was no showing that apportionment of assessment on front foot basis was oppressive, held apportionment sustained. *Sand Springs Railway Co.* v. *City of Tulsa*, 339 P.2d 787 (Okla., April 7, 1959)

Bonds—Improvement—Issuance Upheld

In action by taxpayer to prevent issuance of street improvement bonds, held bonds valid since they did not create "debt" within constitutional limitations. *Switzer* v. *City of Phoenix*, 341 P.2d 427 (Ariz., July 1, 1959)

Contracts—Conflict of Interest

Where town entered into contract with corporation for construction of public works in which corporation mayor was officer and shareholder, held contract invalid even though he did not vote in favor of award. *Bartley, Inc.* v. *Town of Westlake*, 111 So.2d 328 (La., April 27, 1959)

Easements—Sporadic Public Use Will Not Establish

In action to establish public passway over land, held use of land had been permissive and sporadic use by some automobiles and pedestrians was insufficient to establish public interest in passway. *Rominger* v. *City Realty Co.*, 324 S.W.2d 806 (Ky., May 22, 1959)

Filling Stations—Installation Near Airport Not Dangerous

Where county zoning resolution prohibited construction of buildings where human lives might be jeopardized by operation of adjoining airfield, held construction of filling station not inhibited since it was not placed where people usually congregated in large numbers. *Savelkoul* v. *Board of County Com'rs., Ward County*, 96 N.W.2d 394 (N.D., May 8, 1959)

Highways—Improvement District Creation Upheld

Where city clerk made thorough search of public records in determining ownership of tracts within improvement district created for reconstruction of highway, held such action valid even though copies of required notice of passage of resolution creating district were not sent to certain persons. *Shaw* v. *City of Kalispell*, 340 P.2d 523 (Mont., June 3, 1959)

Incorporation Denied Due to Insufficient Population

In proceeding to incorporate territory as city, held evidence that there were only about 180 persons per square mile of territory was sufficient to sustain finding against petitioners. *Petition to Incorporate the City of Duquesne*, 322 S.W.2d 857 (Mo., April 13, 1959)

Intoxicating Liquors—Zoning Violation—License Revoked

Where owner of retail beverage outlet extended business into non-commercial portion of building which had lost its commercial identity, held city could refuse to renew license. *Spinato* v. *Lowe*, 113 So.2d 73 (La. App., June 11, 1959)

Licenses—Auto Insurance Companies Pay Higher Fee

Where city license schedule imposed higher license fees on fire and marine insurance companies held company writing only automobile physical damage insurance was properly classified as fire insurance company. *Motors Insurance Corporation* v. *City of Birmingham*, 113 So.2d 147 (Ala., May 21, 1959)

Motels—Rate Advertising Prohibited—New Trial

Where issues as to economic dependency of community on business of tourism which would allegedly be damaged in event that aesthetic beauty of area was threatened by indiscriminate display of outdoor signs constituted genuine issues of material facts, held such would preclude summary judgment that ordinance was not constitutional. *City of Daytona Beach* v. *Abdo*, 112 So.2d 398 (Fla. App., May 21, 1959)

Ordinances—Promulgation by Fire District Valid

In action concerning violation of rural fire district ordinance, held statute giving directors of rural fire district power to adopt ordinances providing for rules and regulations is not unlawful delegation by Legislature of power to make rules. *Moore* v. *Municipal Court of Salinas Judicial Dist.*, 339 P.2d 196 (Cal. App., May 22, 1959)

Parking—Formation of District Invalid

In action concerning validity of inclusion of realty in proposed parking district, held ordinance forming district void because council in enlarging district evaded statutory requirements. *Safeway Stores, Incorporated* v. *City of Burlingame*, 339 P.2d 933 (Cal. App., May 26, 1959)

Pensions—City's Payments To Fund Clarified

Where city was required to pay percentage of fines and license fees collected to police pension fund, held voluntary payments to avoid prosecution for traffic violations and parking meter receipts were not items controlled by pension ordinance. *People* v. *City of Springfield*, 158 N.E.2d 582 (Ill., May 22, 1959)

Police—City Not Liable for Negligence

In action for wrongful death due to negligence of town's police officer in directing decedent to assist in pursuit of felon, held municipality not liable and could not waive immunity by procurement of liability insurance. *Maffei* v. *Incorporated Town of Kemmerer*, 338 P.2d 808 (Wyo., April 21, 1959)

Sidewalks—Fall from Defect—City Not Liable

In action by pedestrian for injuries caused by fall over small hole in sidewalk, held where there was no proof of notice to city of existence of defect pedestrian could not recover. *City of Miami* v. *Lewis*, 112 So.2d 268 (Fla. App., May 14, 1959)

Streets—Erection of Barricades At Dead End Upheld

In action to have municipality remove wooden barricades from street which dead ended at city line adjoining land operated as super market, held right of ingress and egress to public streets is given to lands parallel to but not at termination of city line. *Good Deal of Ivy Hill, Inc.* v. *City of Newark*, 151 A.2d 584 (N.J. Super. Ct., Law Div., May 20, 1959)

Streets—Unlighted Barricades—City Liable for Accident

In action by motorist for injuries sustained when his automobile ran into unlighted barricades in city street, held city liable since motorist not required to anticipate traps. *Reel* v. *City of South Gate*, 340 P.2d 276 (Cal. App., June 2, 1959)

Taxation—Assessment Valid

In action by taxpayers challenging assessment of their home which was 22 percent of reproduction cost as compared with 35 percent ratio for other property, held such assessment not excessive although total figure was higher than purchase price. *Davidson* v. *City of Lansing*, 97 N.W.2d 592 (Mich., July 13, 1959)

Tax Exemption—Design Engineers Not Engaged In "Manufacturing"

In action under ordinance imposing tax on various businesses but exempting persons engaged in manufacturing, held corporation employing engineers to design furnace equipment to be built by another company was not "engaged in manufacturing." *Hazen Engineering Co.* v. *City of Pittsburgh*, 151 A.2d 855 (Pa. Super. Ct., June 10, 1959)

Tort Liability—Explosion From Gas Leak—City Liable

In action against city for injuries caused by accumulation of propane gas which escaped from leak in service line outside house and entered basement held village liable wherein it did not inspect service line under its exclusive control prior to turning on gas. *Ondarko* v. *Village of Hibbing*, 96 N.W.2d 865 (Minn., June 5, 1959)

Zoning—Redistricting Declared "Spot Zoning"

Where newly created marine commercial districts included only those properties devoted to marine commercial uses which existed as non-conforming uses in other districts prior to adoption of amendment, held amendment constituted "spot zoning" and was void. *Zaehring* v. *Long Beach Tp.*, 151 A.2d 425 (N.J. Super., Law Div., May 8, 1959)

Water Rates—Higher Rates to Partial Users Invalid

In suit against city as operator of water and electric system for charging increased rate for water service to residents who were not also taking electric service, held such rates were unreasonable since they constituted classification based on matter collateral to the service being furnished. *Hicks* v. *City of Monroe Utilities Commission*, 112 So.2d 635 (La., June 1, 1959), affirming case at 18 M.L.C.D. 51.

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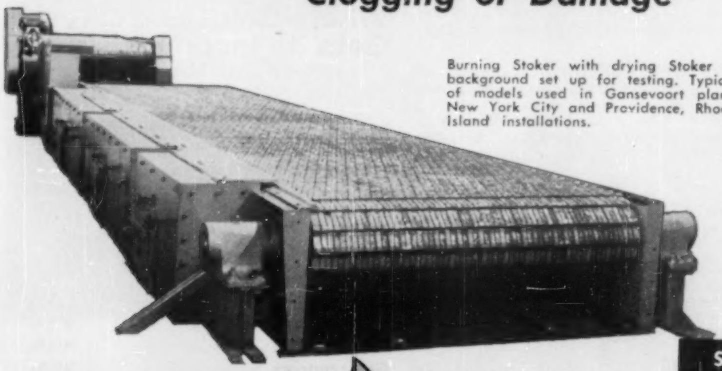

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Overlapping Design of links or keys on both the chain-grate and bar-key models prevents clinkers or non-flammable items from catching between the links causing possible damage to the stoker and reduces sifting of material through the grates.

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Don H. Dollison
So. Pasadena, Calif.

R. M. Tinstman
Abilene, Tex.

Leo S. Fancey
Antioch, Calif.

M. R. Farrell
Rosemead, Calif.

Wm. S. Seaman
Uranium City, Sask.

D. E. Firestone
Troy, Mich.

Lyle W. Alberg, assistant to the manager of Montebello, Calif., was appointed city coordinator of that city succeeding Earnest D. Lindsay.

James L. Asher, manager of Jekyll Island, Ga., has been appointed manager of Whitwell, Tenn., succeeding C. W. Woollums.

R. Powell Black, manager of Dothan, Ala., has been appointed manager of Florence, S. C., succeeding Aaron Marsh. Mr. Black was previously manager of Jasper, Ala., Athens, Tenn., and Aiken, S. C.

Hugh Bowers, Jr., director of the Industrial Promotion Div., Chamber of Commerce of the New Orleans Area, has been appointed manager of Port Lavaca, Tex., succeeding Milford Riggs, Jr.

Charles Brazil, city manager of Port Arthur, Tex., for ten years, was recently re-appointed manager of that city. Mr. Brazil was previously city manager of Tyler, Tex., and mayor of Colorado City, Tex.

John Dinan, assistant manager of Oak Park, Mich., has been appointed manager of Farmington, Mich, succeeding Earl F. Scherffius.

Don H. Dollison has been appointed manager of South Pasadena, Calif., succeeding Frank H. Clough, who is retiring because of health. Mr. Dollison was previously assistant city manager and water superintendent.

Add Ellyson, manager of Sapulpa, Okla., for the past four years, has been appointed manager of Camden, Ark., succeeding Leon Carver. Mr. Ellyson was previously city engineer, assistant manager and manager of Atchison, Kan.

Corwin S. Elwell, manager of Essex Village and Junction, Vt., has been appointed town manager of Brattleboro, Vt., succeeding George F. Miller, who has retired.

Robert J. Eppley, manager of Palatine, Ill., for the past three and one-half years, has been appointed the first manager of Northlake, Ill. Mr. Eppley was previously manager of Washington Courthouse, Ohio, and Greendale, Wis.

Leo S. Fancey, formerly administrative assistant of Antioch, Calif., has been appointed manager, succeeding Phil Minner.

Milton R. Farrell, county administrator of Colusa County, Calif., has been appointed manager of Rosemead, Calif., succeeding William Woollett, Jr., who is now manager of Temple City, Calif.

David E. Firestone, manager of Sylvan Lake, Mich., has been appointed manager of Troy, Mich., succeeding Dave Husse. Mr. Firestone was previously manager of Imlay City, Mich.

Dudley E. Foley, manager of Searsport, Me., has been appointed manager of Wells, Me., succeeding Leigh Webber. Mr. Foley was previously manager of Corinth, Me.

J. C. Jacques Heroux has been appointed first engineer-manager of the Village of Shawinigan-Sud, Quebec, Canada.

Thomas B. Herring, manager of Nevada, Mo., has been appointed manager of Galesburg, Ill., succeeding Raymond L. Harbaugh. Mr. Herring has been at Nevada for the last eight years.

George R. House, manager of Emporia, Va., has been appointed manager of Bedford, Va. Mr. House was previously assistant city manager of Durham, N. C.

Joseph McD. Mitchell, manager of Marple Township, Pa., was recently appointed manager of Newburgh, N. Y., succeeding Albert J. Abrams. Mr. Mitchell was previously assistant manager and director of personnel of Culver City, Calif.

Frank B. Moses, acting city manager of Temple Terrace, Fla., has been appointed manager of that city.

Allan J. Ofensend, administrative assistant of Eau Claire, Wis., has been appointed the first manager of Sparta Township, N. J.

Pete A. Pakey, manager of Woodstock, Ill., has been appointed city manager of Quakertown, Pa., succeeding Ralph L. Yanish.

Howard H. Reed, manager of Newport, N. H., has been appointed manager of Haverhill, Mass.

William John Rolfe, of Clark's Summit, Pa., has been appointed manager of that city.

William S. Seaman, treasurer of Uranium City, Saskatchewan, Can., has been appointed manager of that city succeeding G. J. Darychuk. Mr. Seaman was formerly secretary-treasurer of Fillmore, Saskatchewan.

Robert M. Tinstman, previously administrative assistant of Kansas City, Mo., has been appointed manager of Abilene, Tex., succeeding Henry B. Nabers.

Franklin G. West, former administrator of Olongapo, Phillipine Islands, was appointed third manager of Narbeth, Pa., succeeding John L. Taylor.

Marshall H. Woodburn, former business man of Baltimore, Md., has been appointed manager of Sylvan Lake, Mich., succeeding David Firestone.

James W. Young, former mayor of Vero Beach, Fla., has been appointed manager of that city succeeding Eugene Lyon.

Orin F. Nolting
Executive Director
International City Managers' Association

Where Salt Lake City Gets Its Income

Last year Salt Lake City, Utah, received 38½% of its $12-million municipal income from property taxes; and another 23½% from earnings by the water department. The balance of the income came from 16 miscellaneous funds. Of these, the more important are:

Business licenses and franchise tax	**7%**
Fines and forfeitures	**6½%**
Business tax	**4½%**
Golf courses	**3½%**
Departmental fees	**2%**
Parking meters	**2%**
Road fund	**2%**

Salt Lake City also receives $616,000, or roughly 5% of its municipal income from the state sales tax which Utah collects and apportions back among its various cities. ◄◄

LARGE GOVERNMENT FLEET FINDS BIG SAVINGS

IN '61 LARK PERFORMABILITY

Here is convincing evidence that the '61 Lark can save you money. Four of the country's best-known companies (ranging from the food field to utilities and state governments) thoroughly field-tested the '61 Lark in their regular daily fleet operations prior to introduction.

Many different drivers tested each car, averaging 255 miles apiece at the wheel in their regular work—through city traffic, on high-speed turnpikes, in the mountains, even off-road driving. Results were certified by the United States Testing Company.

The New Skybolt Six engine of 112 HP showed 15.5% to 20.8% higher economy than last year's Six—with a 25% increase of power. Compared to known mileage figures of other cars, these test results indicate superior economy for the '61 Lark—even with its improved acceleration and cruising characteristics!

Other economies to bear in mind are The Lark's high resale value, and fleet-documented savings of 1/3 on maintenance and repairs. All these advantages—with 22 fleet models to choose from—make Studebaker your smartest buy for official cars or pool cars in every department, from Public Health to Police.

Other Features of the '61 Lark include new suspension and steering (30% easier), new bonded brakes (up to 100% longer wear), smart low-line styling, safety-padded dash... over 50 improvements, all contributing to '61 Lark *Performability*.

You have to drive it to believe it!

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'61 LARK

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—SALT MIXTURES

This winter use the method of leading turnpikes that achieve "no shut-down" records despite the severest weather. Combine Solvay® Calcium Chloride with salt. Make sure you have ample stocks on hand, at money-saving bulk rates.* It can be stored alone, or mixed with salt, outdoors under tarpaulin covers, in indoor sheds or covered bins.

Bulk handling of Solvay Calcium Chloride is a one-man operation, both in loading and application. It can be used economically by large and small highway departments.

Calcium chloride-salt mixtures are effective at all temperatures and humidities. While salt's best range is 25-32°F., calcium chloride speeds melting at all temperatures, even down to below zero . . . provides the moisture salt needs to act. Calcium chloride liberates heat as it melts ice, which helps salt work faster. When you combine the two, applications can be lighter and less frequent. This reduces chemical consumption and lowers cost.

For *instant* skidproofing of icy surfaces, treat abrasives with Solvay Calcium Chloride. They hold fast in wind and traffic at all temperatures.

**Also available in moistureproof bags.*

Write us now. Request "ice control data." If you are interested in applying bulk handling to your set-up, ask for a Solvay representative to call. No obligation!

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San Carlos, California

CONVENTIONS — WHEN AND WHERE

Conventions listed this month for the first time are indicated by an asterisk (*)

Dec. 12-14—Washington, D. C.
National Conference on Water Pollution. Information Officer Robert S. Hutchins, Room 4310, Health, Education and Welfare Building South, Washington 25, D. C.

1961

Jan. 4-6—New York, N. Y.
Northeastern Weed Control Conference. Annual Meeting (Hotel New Yorker). Sec.-Treas., Dr. D. A. Schallock, Rutgers University, New Brunswick, N. J.

Jan. 9-13—Washington, D. C.
Highway Research Board. Annual Meeting (Sheraton-Park Hotel). Dir., Fred Burggraf, 2101 Constitution Ave., Washington 25, D. C.

Jan. 18-20—Pocono, Pa.
National Recreation Assoc. Middle Atlantic District. Annual Conference (Pocono Manor Inn). Dir., Field Services, Charles E. Reed, NRA, 8 W. 8th St., N. Y. 11, N. Y.

Jan 19-20—New York, N. Y.
New York Sewage & Industrial Wastes Assoc. Annual Meeting (Park Sheraton Hotel). Exec.-Sec., R. C. Sweeney, New York State Health Dept., 55 Church St., White Plains, N. Y.

Jan. 26-28—Berkeley, Calif.
California Street & Highway Conference. Annual Meeting (Durant and Shattuck Hotels). Exec. Sec., Bob Glenn, ITTE, University of California, Berkeley, Calif.

***Feb. 1-3—Indianapolis, Ind.**
American Water Works Assoc.—Indiana Section. Annual Meeting (Sheraton-Lincoln Hotel). Sec.-Treas., Chester H. Canham, 1330 W. Michigan St., Indianapolis 7, Ind.

***Feb. 6-8—Buffalo, N. Y.**
Association of Towns of State of New York. Annual Meeting (Statler-Hilton Hotel). Exec. Sec., William K. Sanford, 91 State St., Albany, N. Y.

***Feb. 6-8—Charleston, S. C.**
Association of Asphalt Paving Technologists. Annual Meeting (Francis Marion Hotel). Sec., Treas., Ward K. Parr, Box 619, Ann Arbor, Mich.

***Feb. 20-23—St. Louis, Mo.**
American Concrete Institute. Annual Meeting (Chase-Park Plaza Hotel). Sec.-Treas., William A. Maples, 22400 W. Seven Mile Rd., Detroit 19, Mich.

***Feb. 25-Mar. 1—Los Angeles, Calif.**
National Recreation Assoc. California and Pacific Southwest District. Annual Conference (Statler Hotel). Dir., Field Services, Charles E. Reed, NRA, 8 W. 8th Street, New York 11, N. Y.

***Feb. 26-Mar. 2—Boston, Mass.**
The Associated General Contractors of America. Annual Meeting (Statler Hotel). Exec. Dir., James D. Marshall, 1957 "E" St., N.W., Washington, D. C.

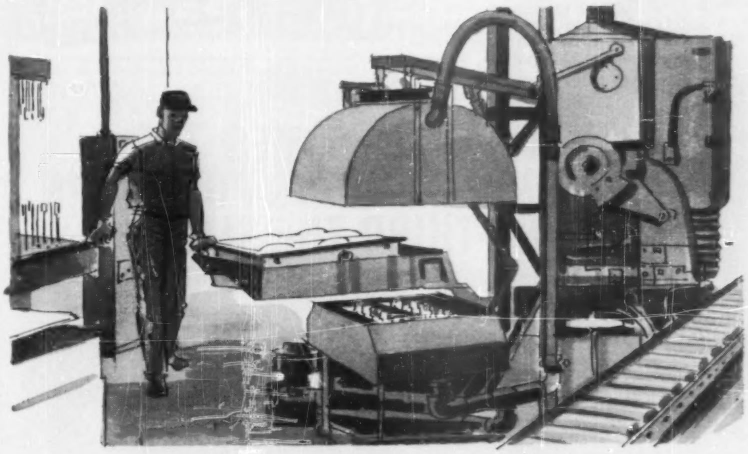
***Mar. 3-4—Ft. Worth, Tex.**
Texas Beach and Pool Assoc. Annual Meeting (Western Hills Hotel). Exec. Sec., G. R. Herzik, Jr., Texas State Health Dept., 1100 W. 49th, Austin, Tex.

***Mar. 5-8—Atlantic City, N. J.**
American Road Builder's Association. Annual Meeting (Chalfonte-Haddon Hall Hotel). Exec. V.P., Maj. Gen. Lewis W. Prentiss, 600 World Center Building, Washington 6, D. C.

***Mar. 13-16—Bal Harbour, Fla.**
American Concrete Pipe Association. Annual Meeting (Americana Hotel). Man. Dir., Howard F. Peckworth, 228 No. La Salle St., Chicago 1, Ill.

***Mar. 15-17—Atlantic City, N. J.**
New Jersey Water Pollution Control Assoc. Annual Meeting (The Traymore Hotel). Sec., Charles Saunders, P. O. Box 124, Linden, N. J.

(Continued on page 156)



The M & H Spirit

There are those who might believe that a valve is just a valve. They might say: "What's in a name? All valves are made of about the same iron and bronze — so what?"

The answer is that one valve can be better than another because it is more skillfully designed and the men who make it are craftsmen who take greater pride in their work. The honor and honesty of a man — his veracity, fidelity and sincerity — is best shown by his acts.

It is by their daily work at M & H that the attitude of M & H personnel toward M & H products takes on form and substance. We call it the M & H Spirit — and it is an inherent factor in the quality and operating efficiency of an M & H Valve or Hydrant.

Thirty-four years of M & H history proves that an M & H Valve or Hydrant is in a class by itself. Its record of efficient trouble-free service has caused the Company to grow from 60 to 500 employees, with a present annual payroll of over $2,000,000.00. It has so rapidly increased in use throughout the U. S. and foreign lands that M & H Company has become one of the leading industries in its field.

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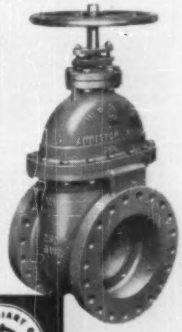

AT A FRACTION OF THE SIZE and weight of competitive heavy-duty units, this compact portable gives you 50 to 100 watts effective cleaning power per gallon! Transistorized circuitry is one reason; another is the exclusive 90%-efficient Multipower transducer—a transducer more efficient by far than any other on the market!

YOU GET THREE SYSTEMS IN ONE! Only Acoustica offers you variable control of three tuned power levels—from gentle washing to high-energy scrubbing!

ACOUSTICA'S TUBELESS CIRCUITRY means virtually trouble-free performance ...and cleaning action that starts the instant you flick the switch.

COMPLETELY SELF-TUNING, these new units are extremely easy to operate. No meters to read, no adjustments to make, no monitoring necessary.

WHERE OTHER METHODS WON'T WORK—where the slightest contaminant in a small, complex device can impair reliability and cause rejects—Acoustica systems do the job thoroughly and quickly. Even in ordinary applications, Acoustica cleaning often proves superior because of the savings it makes possible in time and labor. Wherever ultrasonic cleaning is the answer, an Acoustica system is the best answer.

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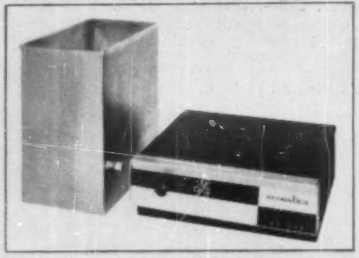

20 kc transistorized systems available in power ratings of 250, 500, 1000 watts; tank sizes of 3, 5, 10 gallons. Integral tank-transducer combinations available.

UP TO THREE TIMES THE ULTRASONIC CLEANING POWER—IN ONE-THIRD THE SIZE

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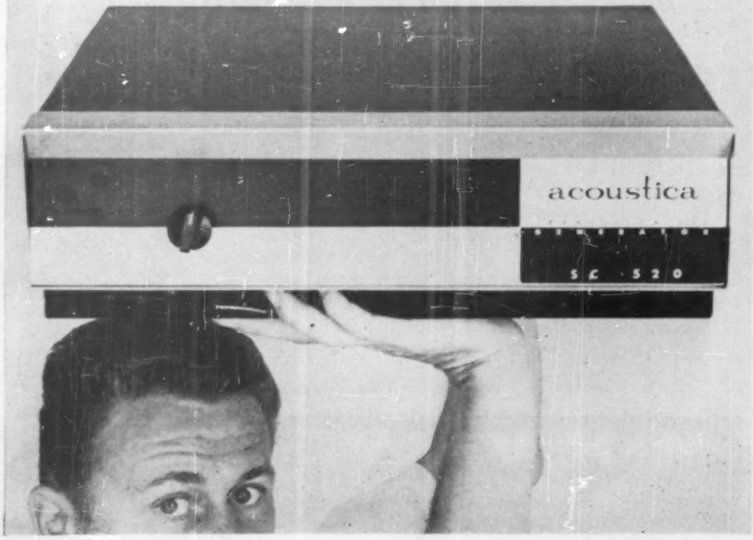


Conventions— When and Where

(Continued from page 155)

***Mar. 8-10—San Francisco, Calif.**
California Municipal Utilities Assoc. Annual Meeting (Sheraton-Palace Hotel). Exec. Sec., F. V. Frey, 100 N. Garfield Ave., Rm. 108, Pasadena, Calif.

***Mar. 12-17—College Sta., Tex.**
Texas Water and Sewage Works Association. Annual Meeting (Memorial Student Center, Texas A&M College). Exec. Dir., G. R. Herzik, Jr., 1100 West 49th St., Austin, Texas.

June 4-9—Detroit, Mich.
American Water Works Association. Annual Convention (Cobo Hall). Sec., Raymond J. Faust, 2 Park Avenue, New York 16, N. Y.

Sept. 24-27—Minneapolis, Minn.
American Public Works Association. Annual Meeting (Municipal Auditorium). Exec. Dir., Robert D. Bugher, 1313 East 60th Street, Chicago 37, Ill.

Oct. 15-18—Milwaukee, Wisc.
Water Pollution Control Federation. Annual Meeting (Milwaukee Auditorium). Exec. Sec., Dr. Ralph E. Fuhrman, 4435 Wisconsin Ave., N.W., Washington, D. C.

Smog Alerts

Advance warning of impending severe smog conditions is now available to all cities east of the Rocky Mountains under a new cooperative network operated by the Weather Bureau, U. S. Department of Commerce, and the Public Health Service, U. S. Department of Health, Education, and Welfare.

Thirty-six states will be able to get warning bulletins by teletype from the Weather Bureau Research Station, located at the Public Health Service's Sanitary Engineering Center in Cincinnati, which is financed by a Public Health Service grant.

"Stagnation Bulletins," so called because the danger of smog is greatest when air is abnormally calm, will be issued whenever weather conditions warrant. With this advance warning, cities can curb traffic, industrial, and other sources of pollution during the danger period.

The Stagnation Bulletins will be distributed through local Weather Bureau stations and, normally, only to air pollution control officials and representatives of industry, to inform them of weather conditions likely to contribute to the buildup of high levels of air pollution. Interested agencies or groups may make arrangements to receive the forecasts by getting in touch with the Meteorologist-in-Charge at the nearest U. S. Weather Bureau station. ◄◄

MUNICIPAL AND CIVIC PUBLICATIONS

Publications on these pages are available from the addresses indicated and are usually free unless a price is given.

A Critical Water Study

WATER SUPPLY: ECONOMICS, TECHNOLOGY AND POLICY—*By Hirshleifer, DeHaven, and Milliman. The University of Chicago Press, 3750 Ellis Avenue, Chicago 37, Ill.* 1960. 400 *pp.* $7.50.

This Rand corporation research study challenges traditionally accepted solutions to economic, technological and policy problems of water supply. Instead it offers a fundamental economic and technical analysis that yields some startling but well-documented conclusions. Based on detailed study of the proposed Feather River project in California and the Cannonsville reservoir and aqueduct as part of the New York City supply, the authors set forth their critical views of both projects.

In water supply, the authors conclude that overbuilding of supplies has been due primarily to the underpricing of water, defective techniques of project evaluation, and the use of low riskless discount rates for what are actually high-risk undertakings. The criticisms and practical suggestions set forth will prove instructive to political authorities, lawyers and other professionals in the field.

Politics

ON POLITICS AND POLITICIANS—*By H. B. Mayo. Bureau of Public Administration, University of South Carolina, Columbia, S. C.* 1960. 35 *pp.*

A good little booklet to have on hand in case you need to make a speech on democratic government. The author makes a convincing case that the elected official is a lot better than he is described in most newspapers and any objective observer would agree.

It reminds us of the little truism that while the politics of a free people are messy, the dictatorship of a police state is bloody, and these are our only two choices.

Urban Renewal

URBAN REHABILITATION: COLUMBIA, S. C. —*Columbia City Hall, Columbia, S. C.* 1960. 20 *pp.*

Columbia does a convincing job of selling urban renewal to its people in a neat, dignified, yet eye-catching booklet.

Soil Mechanics

FROM THEORY TO PRACTICE IN SOIL MECHANICS—*Selections from the writing of Karl Terzaghi, with bibliography and contributions on his life and achievements, prepared by L. Bjerrum, A. Casagrande, R. B. Peck, and A. W. Skempton. John Wiley & Sons,* 440 *Park Ave. So., N. Y.* 16, *N. Y.* 1960. 425 *pp.* $12.

A single volume giving an account of Terzaghi's life and his method of working and a representative selection of his papers. These papers, which are in English for the most part, include those that established the science of soil mechanics, a selection of his professional reports that indicate his methods of dealing with specific jobs, and a complete bibliography of his works.

The collection contains papers previously hard to find, and others have been translated for this book. They provide a special insight into how Terzaghi approached and solved foundation, landslide, tunneling, and earth dam problems.

Recreation

PLAYGROUNDS: THEIR ADMINISTRATION AND OPERATION—*By George D. Butler. The Ronald Press Company, 15 East 26th St., New York* 10, *N. Y.* 1960. 513 *pp.* $7.

This volume, the third edition, is a thorough-going text on an aspect of park management that is increasing in importance. It discusses topics such as the neighborhood playground, recruitment and selection of workers, seasonal programs, staff organization, publicity, safety and many others.

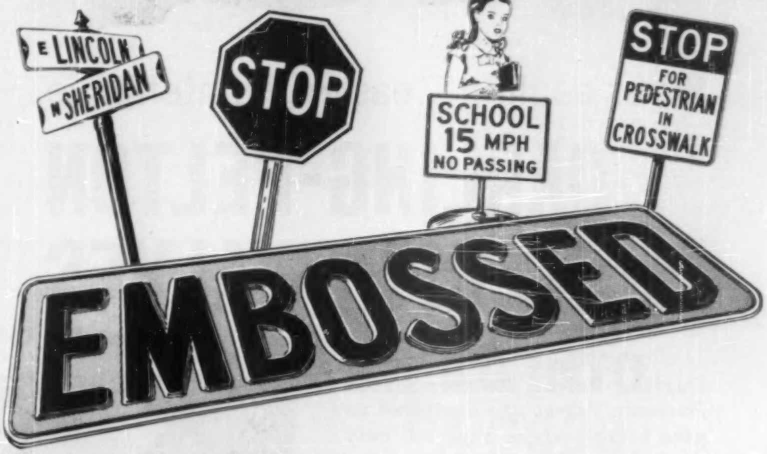
Area Economic Development Study in the U. S.

REGIONS, RESOURCES & ECONOMIC GROWTH —*By Harvey S. Perloff, Edgar S. Dunn Jr., Eric E. Lampard, & Richard F. Muth. John Hopkins Homewood Press, Baltimore* 18, *Md.* 1960. 716 *pp.* $12.

Because the economic growth of our country is one of our most pressing problems, this book is a timely one. This scholarly study is a major effort toward

(Continued on page 158)

THE BEST ECONOMY OF ALL—



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Miro-Flex easy-to-see embossed signs – give extra safety, when safety counts! Embossed design and raised letters add extra strength and rigidity for years of rugged service – outlast ordinary flat-surface signs by far! Miro-Flex quality finish is baked on to stay – stands up in any kind of weather. And, raised letters are easier to read – in Miro-Flex street name assemblies, traffic control, and signs of all types. Street name assemblies are available in rust-proof steel or aluminum. So choose Miro-Flex signs, for easier readability and longer service – to give extra safety, when safety counts! Write for free Miro-Flex catalog of quality street name assemblies and traffic control signs, today!

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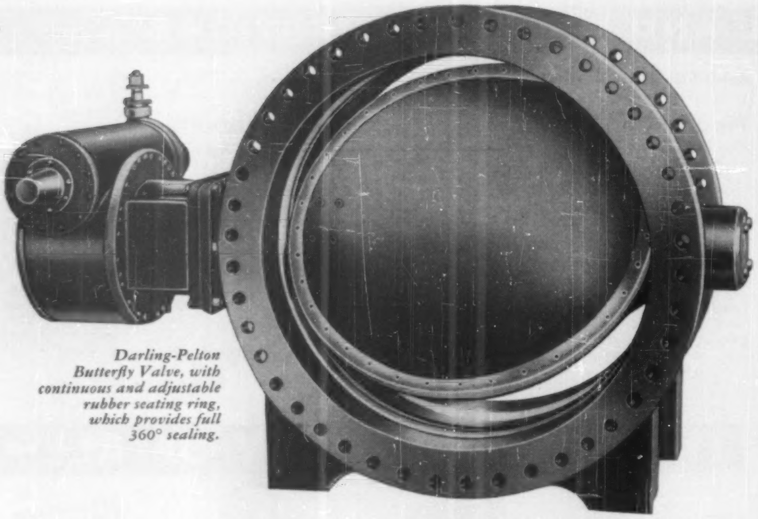

Darling-Pelton Butterfly Valve, with continuous and adjustable rubber seating ring, which provides full 360° sealing.

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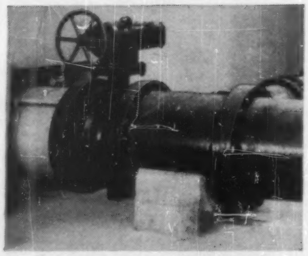
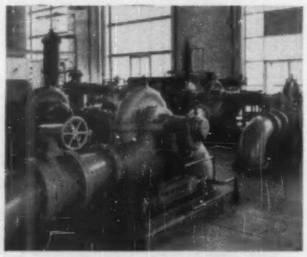
Darling-Pelton Rubber Seated Butterfly Valves are designed to give bubble-tight shut-off, easy operation and trouble-free service throughout the life of the valve. The sealing member is a continuous resilient ring displaced from the operating shaft... and fully adjustable to give bubble-tight closure around the circumference of the disc.

These high-performance valves are designed in accordance with A.W.W.A. specifications...for hydrostatic operating pressures up to 125 psi and velocities up to 16 feet per second. In addition to water service, they have been successfully used on vacuum, gas and chemical service.

To get *all* the facts, write us for Bulletin No. 5904.



Close-up view of installation in large municipal water plant.



View of Darling-Pelton Butterfly Valves installed in Pittsburgh's new filtration plant.

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(Continued from page 157)

understanding the causes and patterns of regional and urban economic growth and especially the role of natural resources. Those interested in urban, regional or national economics will find this book provides a broad knowledge of many of the factors so necessary for sound economic and resource planning.

Juvenile Delinquents

THEY TALKED TO A STRANGER—*By Len O'Connor. St. Martin's Press, Incorporated, 175 Fifth Avenue, N. Y. 10, N. Y.* 1959. 276 *pp.* $3.95.

A heart-breaking account of juvenile delinquents without much that can tell what should be done to correct matters. The author believes that we need more supervised play areas, more youth clubs, a stronger bond of family ties, which is not news, and about which, no one would argue.

The least that can be said is that these troubled youngsters are a resource that the nation needs. The have an abundance of resourcefulness, energy. Few have any family ties, any sense of morals or well-defined impression of right and wrong, nor has anyone bothered to explain these to them. But they are a resource that must be developed, even as we must mine valuable minerals that are often equally difficult to develop.

Revised Lighting Handbook

LIGHTING HANDBOOK—*Westinghouse Lamp Division, Bloomfield, N. J.* 1960. 250 *pp.* $3 *prepaid.*

A new edition of the Westinghouse "Lighting Handbook" is announced by the Westinghouse lamp division. It contains a section on newest light sources, information on coefficients of utilization and maintenance factors, together with footcandle tables, and application illustrations.

Major revisions have been made to the chapters on floodlighting design, roadway lighting and sign lighting. The handbook was first published in 1941.

Finance

ANNUAL FINANCIAL REPORT—*City of San Antonio, Texas, 1959-1960. Bennett R. Bolen, Director of Finance. Office of the Director of Finance, City Hall, San Antonio, Texas.* 1960. 174 *pp.* 50 *cents for postage and handling.*

An eye-catching report, remarkably detailed, the type of presentation that is bound to win confidence in financial circles where bonds have to be sold.

Public Taste in Housing

HOUSING CHOICES AND CONSTRAINTS — *By Nelson Foote, Janet Abu-Lughod, Mary Mix Foley, and Louis Winnick. McGraw-Hill Book Company, Inc., 330 West 42nd St., N. Y. 36, N. Y.* 1960. 450 *pp.* $12.50.

A good book for the urban planner and administrator. It tells why the public prefers certain types of housing. It shows how family tastes change in housing as the children grow. It compares the city with the suburbs and tells the percentage of the family budget spent for housing by the people of various income levels. It attempts to uncover inadequacies in housing today, and explains how planning can maintain or improve a community's residential property.

Reference Book on Legal Problems of Construction

IT'S THE LAW: RECOGNIZING AND HANDLING THE LEGAL PROBLEMS OF PRIVATE AND PUBLIC CONSTRUCTION—*By Bernard Thomson. Channel Press, 159 Northern Boulevard, Great Neck, N. Y. 1960. 436 pp. $7.50.*

A handy desk reference for city officials to consult in advance so that they can be ready to avoid or handle the ever increasing legal problems in the construction field. The book analyzes standard construction agreements point by point in the light of actual court decisions and suggests new and improved clauses to reduce legal risks. It also includes sample form agreements, not previously available in book form, that will serve as guides.

ANNUAL REPORTS WORTH READING

HARTFORD, CONN. — 1960 Annual Report. Office of the City Manager, Municipal Building, Hartford, Conn. 1960. 41 pp.

HONOLULU, HAWAII—Department of Public Works, 1959 Annual Report. Department of Public Works, City and County of Honolulu, Honolulu 13, Hawaii. 1960. 90 pp.

PHILADELPHIA, PA.—Water Department, 1959 Annual Report. Water Department, City Hall, Philadelphia, Pa. 1960. 48 pp.

WINNIPEG, CAN. — Planning Commission, 1959 Annual Report. Metropolitan Planning Commission of Greater Winnipeg, 1100 Electric Railway Chambers, 213 Notre Dame Ave., Winnipeg, Canada. 1960. 36 pp.

FINANCE AND TAXATION

CONNECTICUT—A Guide to Property Revaluations. By Patricia Stuart. Institute of Public Service, The University of Connecticut, Storrs, Conn. 1960. 16 pp. 50 cents.

MARYLAND—Local Government Finances in Maryland, 1958-1959. State Fiscal Research Bureau, 310 West Preston St., Baltimore 1, Md. 1960. 134 pp.

PARKS AND RECREATION

DARIEN, CONN.—A Report on the Land Requirements for Park and Recreation Use. Planning and Zoning Commission, Municipal Building, Darien, Conn. 1960. 36 pp.

PLANNING, ZONING AND HOUSING

CHARLESTON, W. VA.—1960 Progress Report. Municipal Planning Commission, City Building, Charleston, W. Va. 1960. 35 pp.

MADISON, WIS.—Madison's Plan for Use of Land. Madison Plan Commission, Room 414, City-County Building, Madison 9, Wis. 1959. 29 pp.

MILWAUKEE, WIS.—Reconnaissance of Downtown Milwaukee. A Study of Problems, Potential and Policy. Nelson-Ball & Assoc., Planning, Research and Public Management Consultants, 1733 North Farwell Ave., Milwaukee 2, Wis. 1960. 21 pp. $3.

MINNEAPOLIS-ST. PAUL, MINN.—Metropolitan Economic Study. Report No. 5. Twin Cities Metropolitan Planning Commission, Griggs-Midway Bldg., University at Fairview, Saint Paul 4, Minn. 1960. 65 pp. $1.

PALM SPRINGS, CALIF.—The General Plan. Planning Department, City of Palm Springs, P. O. Box 850, Palm Springs, Calif. 1960. 88 pp. $2.50.

RIVERHEAD, N. Y.—Survey and Analysis, Town of Riverhead. State of New York Division of Housing, 270 Broadway, New York 7, N. Y. 1960. 54 pp.

TRAFFIC

PENNSYLVANIA — Improved Transportation for Southeastern Pennsylvania. Bureau of Municipal Research and Pennsylvania Economy League, Liberty Trust Building, Philadelphia 7, Pa. 1960. 400 pp. $10.

WASHINGTON—Washington Traffic Statutes. Association of Washington Cities, 250 Smith Hall, University of Washington, Seattle 5, Wash. 1960. 72 pp.

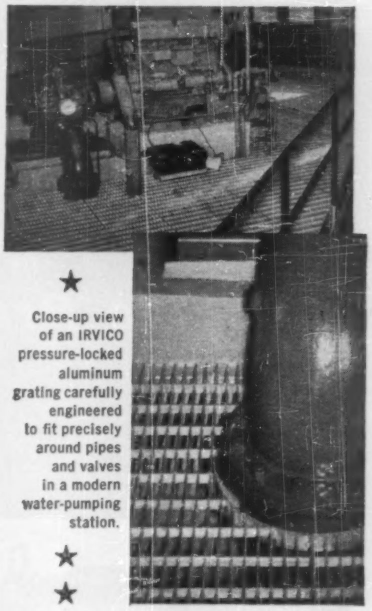
REPRESENTATIVE MUNICIPAL BOND ISSUES

From October 4th to November 1st, 1960

Date of Issue	*Locality*	*Amount in $1000*	*Purpose*	*Term Yrs. to Maturity*	*Rate of Int.*	*Yield %*
10/ 4/60	Hackensack, N. J.	819	Public Impr. & Equipment	7⅓	3.20	3.18
10/ 5/60	Alameda Co. Water Dist. No. 1, Calif.	1,870	Water Improvement	....	....	4.00
10/ 5/60	Middletown, Ohio	984	Sewer	6	3.00	2.86
10/ 6/60	Fond du Lac, Wis.	1,600	Corporate Purpose	....	....	3.06
10/10/60	Middlesex Co., N. J.	2,000	County Gen. Improvement	7⅓	3.05	3.05
10/10/60	Port of Portland, Ore.	2,000	Port Improvement	10½	3.50	3.26
10/11/60	Newark, N. J.	6,907	Water	10⅔	3.55	3.52
10/13/60	Greece, N. Y.	2,095	Improvement	14⅙	3.70	3.64
10/17/60	Atlanta, Ga.	1,400	Water Works Revenue	....	....	3.27
10/17 60	Brown Co., Wis.	1,500	Corporate Purpose	10½	3.18	3.17
10/18/60	Los Angeles Co., Calif., Flood Control Dist.	10,000	Flood Control	15½	3.75	3.69
10/18/60	Utica, N. Y.	1,500	Arterial Highway	8	3.00	2.92
10/19/60	Lowell, Mass.	5,494	Water, School, Skating Rink, Sewer	8½	3.50	3.45
10/19/60	Norwalk, Conn.	3,100	Capital Improvement	10½	3.25	3.20
10/19/60	Vestal, N. Y.	1,895	Public Improvement	11⅝	3.70	3.62
10/20/60	Hot Springs, Ark.	2,500	Industrial Plant	....	5.00	....
10/25/60	Farmington, Conn.	1,750	Sewer	10½	3.20	3.12
10/25/60	Olean, N. Y.	1,225	General Improvement	13½	3.25	3.24
10/25/60	Vineland, N. J.	4,195	Municipal Electric Plant	8	3.20	3.18
11/ 1/60	St. Cloud, Fla.	1,000	Utilities (Revenue)	15	....	4.03

***Compiled from* THE WEEKLY BOND BUYER**

PRECISION
AND
SKILL



★

Close-up view of an IRVICO pressure-locked aluminum grating carefully engineered to fit precisely around pipes and valves in a modern water-pumping station.

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★

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When you specify IRVICO grating, you receive the benefit of engineering and manufacturing skill developed during more than 57 years of experience in the production of grating. Each IRVICO order is given careful engineering attention. Experienced shop craftsmen execute your order with finesse, and our inspectors permit no grating to be shipped unless it meets your specifications and our high standards. This insures high quality grating, an excellent fit, and no extra installation costs. Catalog on request

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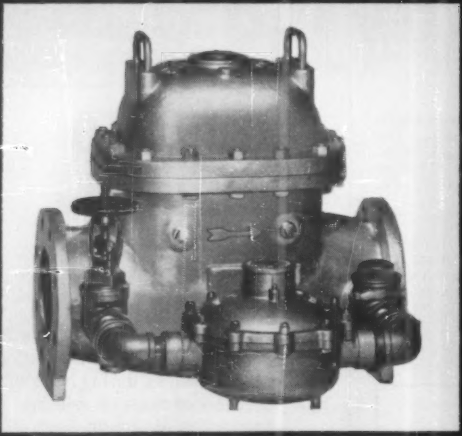
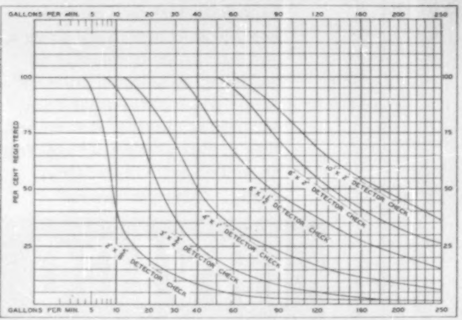
Detect Leaks and Still Get Minimum Loss of Head Through Fire Protection Service Lines



Hersey Model DC (Detector Check) made in 2", 3", 4", 6", 8" & 10" sizes, equipped with a Hersey Disc Meter on the Bypass to indicate the use of water and measure accurately the lower rates of flow, will in case of necessity deliver automatically large volumes of water without obstruction.



PER CENT REGISTERED

The loss of pressure through Hersey Detector Checks, at all rates of flow up to the full capacity of each size, is less than 4 pounds per square inch.

This device is designed to detect leakage or use of water from services which are intended to be exclusively for fire protection needs. Sizes from 3" to 10" are listed as standard under the re-examination service of Underwriters' Laboratories, Inc. and approved by Factory Mutual Laboratories for use in Factory Mutual insured properties, also listed by Underwriters' Laboratories of Canada.

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HERSEY PRODUCTS
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Branches: Atlanta, Boston, Chicago, Cleveland, Dallas, Denver, Kansas City, Mo., Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle.

New Aerial Ladders

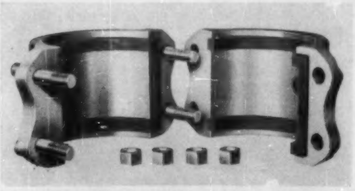
THE HOLAN CORP., 4100 W. 150th ST., CLEVELAND 35, OHIO, has announced that the Series 2600-A manual-hydraulic ladder will replace the Series 2600. While retaining the handy pushbutton control feature, Holan engineers have changed the support frame construction from tubular to plate metal for added rigidity. Non-skid pierced metal pedestal step treads and re-location of the rotation crank to the left of the mast were changes made for added safety and ease of operation.

The new ladder is raised by pushing a button and lowered by turning a needle valve control handle located below the button box on the right side of the mast. They are available in 28 and 32 foot heights, rotate 360° in either direction and elevate to a 75° angle.

Split Sleeve to Repair Pipe Breaks

A new ductile-iron split sleeve which permits quick, easy, permanent repair of 4-, 6-, and 8-inch transverse cast iron pipe underground breaks is now available from JAMES B. CLOW & SONS, INC., 201-299 N. TALMAN AVE., CHICAGO 80, ILL.

The sleeve consists of two-piece glandless construction of corrosion-resistant, 70,000-psi tensile ductile iron. After the damaged pipe has been uncovered, all that is required to install the repair sleeve is to put the two halves on either side of the damaged area, insert and tighten four bolts. The nuts and bolts also are of high strength, corrosion-resistant alloy. The pre-assembled rubber gasket, cemented in either half of the sleeve, makes a tight seal.



Put the two halves of the repair sleeve shown here over the break area, insert and tighten the four bolts, and presto—the job is done.

Homogenizes Soil

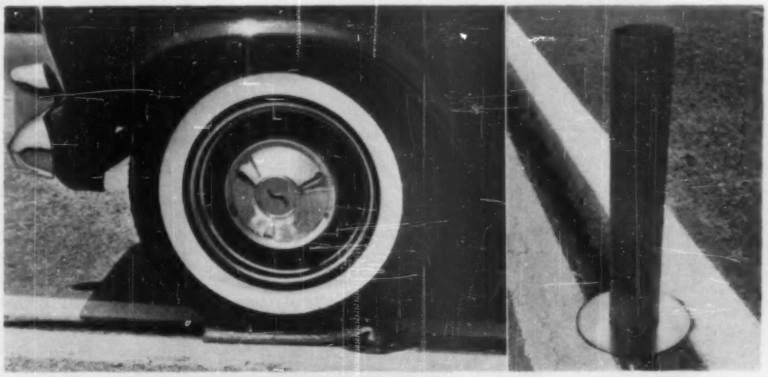
Almost as easily as a wife makes smooth whipped potatoes in an electric mixer, a tractor operator now can churn hard dirt into a smooth, homogeneous layer in preparation for street building, lawn renovation, compost mixing or other soil fitting jobs.

This is the analogy used by L. E. Dearborn, general sales manager, TRACTOR AND IMPLEMENT DIVISION, FORD MOTOR COMPANY, DEARBORN, MICH. in announcing a new line of rotary tillers.

Driven by the tractor's power take off, the Tillit engages the ground with rotating high strength tines which dig down to a maximum depth of six inches, literally pulverizing the soil or thoroughly mixing any added aggregates. It is ideal for soil cementing operations and lawn renovation.

The Dearborn Tillit is available in five models, with cutting widths ranging from 36 to 60 inches, and with either centered or offset hitches.

New Flexible Traffic Marker



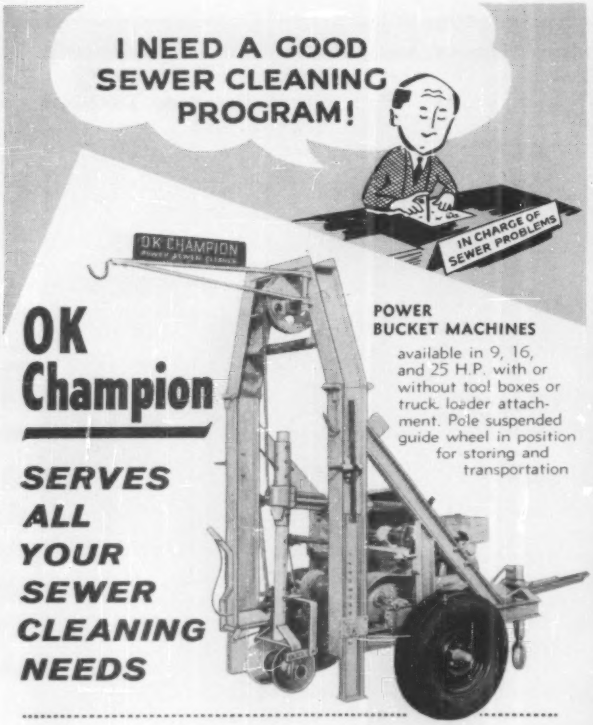
To the left the "Hypalon" marker is being run over by a car. On the right, it is shown returned to its original shape.

A tough, flexible traffic marker is now available at reasonable price for traffic control on streets, highways and in parking areas. Made with long-lasting "Hypalon" synthetic rubber, the brilliant yellow tubular marker snaps back even if hit by a car moving at 60 mph. It stands erect throughout its long service life, flattens when hit and does not damage tires or fenders as do rigid markers.

"Hypalon" was specified for the marker because it will retain lasting coloration, as well as toughness and resiliency under exposure to sun, weather, oils, and grease.

The body of the marker is a 16-inch tube of the rugged elastomer, 2½-inches in diameter, mounted on a metal disk base. The base is affixed firmly to the pavement with mastic or epoxy compounds. Tests show that both base and tube can be run over repeatedly by auto-

(Continued on page 163)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IN CHARGE OF SEWER PROBLEMS
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POWER BUCKET MACHINES

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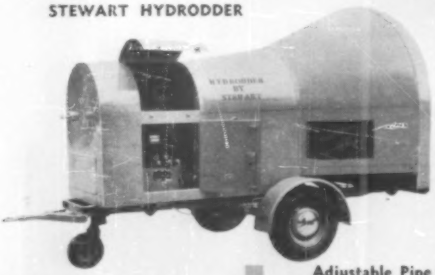

Modern complete hydraulic drive with built-in safety. Will allow multiple choice of rod sizes, and lengths without costly drive modification.

We offer job designed-field-tested-performance proven-heavy-duty bucket machines and accessories

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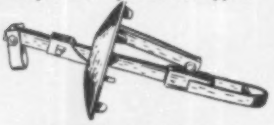
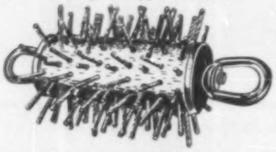
We built the first expanding sewer bucket over 40 years ago.

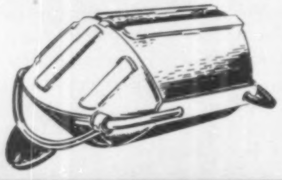
Adjustable Pipe Line Scrappers



Porcupine Type Brushes



Heavy Duty Expanding Sewer Buckets



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At Last! **A TRAFFIC MARKER THAT CANNOT BE**

KNOCKED DOWN, BLOWN DOWN, or ACCIDENTALLY MOVED!

Fixatron Traffic Markers* are made of Du Pont Hypalon, a tough, synthetic rubber that will take traffic and weather abuse without losing its shape, its color, or its temper! Readily fastened to any road surface. Stands a tall 16 inches with a slim 2½ inch waist. Highly visible day or night. Write today for trial order. Specify Model FM-2 @ $4.95 each, F.O.B. Glenside, Pa. Packed 50 to a carton. Smaller quantities upon request.

*Patents Applied For

Fixatron TRADE MARK **TRAFFIC MARKERS**

NATIONWIDE
TRAFFIC ENGINEERING CO., INC.
Makers of Fixatron TRAFFIC MARKERS

2535 Mt. Carmel Avenue, Glenside, Pennsylvania

(Continued from page 161)

mobile and truck wheels without damage, yet the marker can be dismounted in a minute's time.

The ability of the markers to be dismounted and moved is a major advantage, permitting ready revision of traffic control plans without unnecessary expense. The base plates are inexpensive and can be left in position on the pavement without danger of damage to tires. Tubes can be reflectorized as desired.

For more information, write to NATIONWIDE TRAFFIC ENGINEERING CO., INC., 2535 MOUNT CARMEL AVE., GLENSIDE, PA.

Sicard Opens New Truck Plant

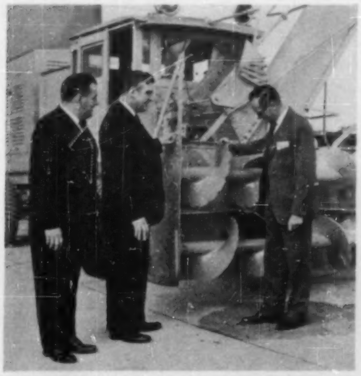
The new truck plant of Sicard Inc. was officially opened at Ste. Therese, Quebec, recently, making an important addition to the Canadian automotive industry.

Mr. Rousseau, Quebec minister of industry and commerce, called it a splendid example of the increasingly important part Quebec Province is playing in the growth of Canadian secondary industry.

Sicard President Marc A. Dhavernas said that the firm, known for snow-blowers and municipal road equipment, entered the truck field several years ago to meet the demand for Canadian-built equipment.

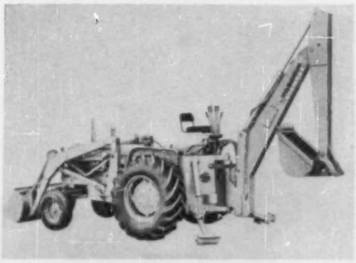
Employing some 100 workers, the new plant is equipped to manufacture transport tractors, construction trucks, crane carriers, and heavy off-highway trucks. (Through a licensing agreement with the KW-Dart Company of St. Louis, Sicard manufactures a complete line of world-famed KW-Dart trucks at the plant.)

Sicard's main plant in Montreal will continue manufacturing truck components.



At the official opening of Sicard's new Ste. Therese truck plant, October 1st, are (left to right) J. Bernard Lavigueur, Sicard executive vice-president; Hon. Andre Rousseau, Quebec Minister of Industry and Commerce; and Marc A. Dhavernas, Sicard president, examining the world's first snowblower built by Sicard in 1927 and sold to the City of Outremont, Quebec.

New Parsons-Shawnee 1500 Backhoe



New Parsons-Shawnee 1500 Backhoe mounted on Allis-Chalmers tractor features 15-ft. maximum digging depth with 24, 30, or 36-in. wide buckets. The 1500 retains all outstanding features of previous models, but incorporates valuable new ones as well.

Wain-Roy Acquires Dozer Company

In line with its diversification and expansion program, WAIN-ROY CORPORATION, 150 RIVER ST., FITCHBURG, MASS., announces the purchase of all the stock of A. C. Anderson, Inc., of Wildwood, N. J. and Des Moines, Iowa, through a newly formed subsidiary, A. C. Anderson Corporation.

A. C. Anderson, Inc. manufactures industrial hydraulic loaders, power crown loaders, bulldozers, hydraulic roadside mowing machines and fire line plows. Wain-Roy and Anderson have cooperated in various projects for a number of years. Arthur C. Anderson, president, and Russel C. Batten, treasurer at Anderson, will retain their positions in the new corporation.

Wain-Roy is the originator of hydraulic tractor-mounted backhoes. Its offices and manufacturing plants are located in Fitchburg and Hubbardston, Mass. The new acquisition will enable Wain-Roy to offer a more complete line of equipment.

Nuclear Sludge-Pump Control

A nuclear sludge-pump control to automatically measure sludge solids in a sewage line has been developed by the engineers of the Nuclear Corp. of America and will be distributed exclusively by Komline-Sanderson Engineering. The device causes the sludge pump to operate as long as the percentage of solids remains above a predetermined level. When the sludge concentration drops below this level it stops the pump.

The heart of the "sludge reader" is a harmless radioactive source whose radiation passes through the pipe and its contents. Variations in density of the sludge will cause variations in the nuclear beam as received by the detector. This signal is passed on to a computer circuit which automatically signals the function controls.

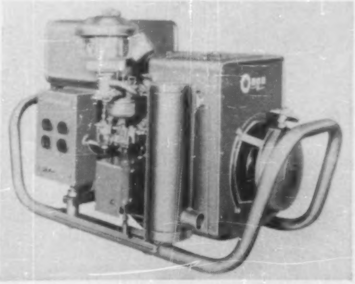
It has been designed to give an unprecedented degree of accuracy over a wide range of temperature, line voltage and other variables. The unit is transistorized for trouble free and long life operation. A built in calibration device permits accurate compensation for electronic circuitry and source decay.

Write for more information to KOMLINE-SANDERSON ENGINEERING CORP., PEAPACK, N. J.

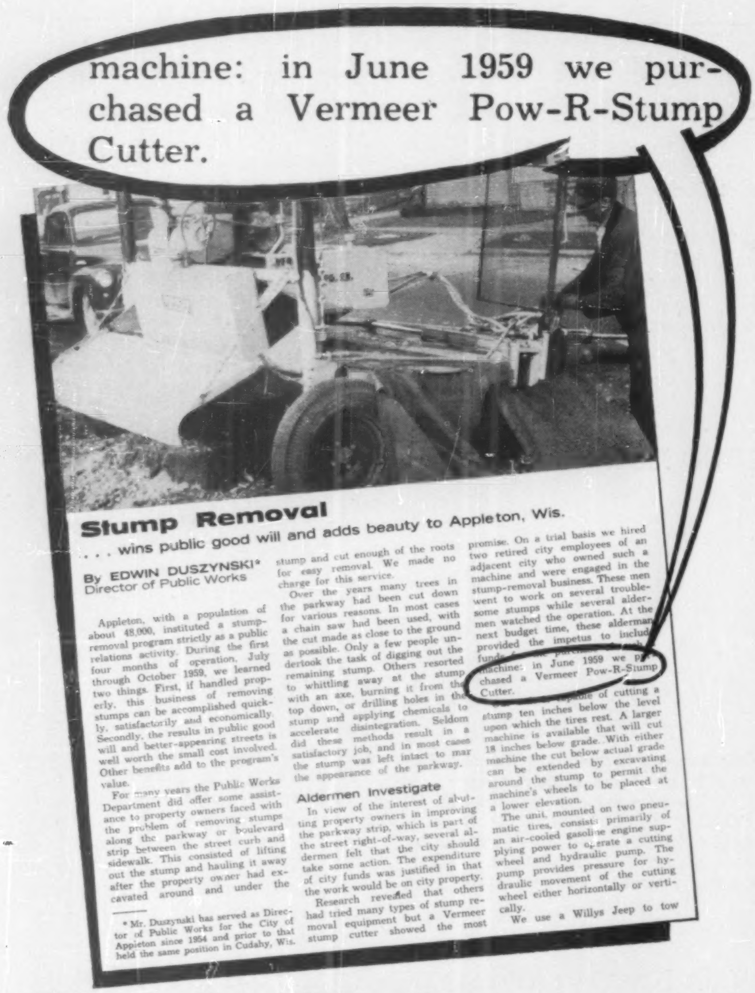
Speed Control for Electric Generating Plants

Two standard series of Onan portable electric generating plants are now equipped with "Idle-MATIC," a newly developed speed control device specially developed for use where intermittent loads are frequent, and to retain all the "per-

(Continued on page 164)



The Model 205 AJ-1PL is equipped with the new idle-MATIC control developed for use where intermittent loads are frequent.



Stump Removal

. . . wins public good will and adds beauty to Appleton, Wis.

By EDWIN DUSZYNSKI*
Director of Public Works

Appleton, with a population of about 48,000, instituted a stump-removal program strictly as a public relations activity. During the first four months of operation, July through October 1959, we learned two things. First, if handled properly, this business of removing stumps can be accomplished quickly, satisfactorily and economically. Secondly, the results in public good will and better-appearing streets is well worth the small cost involved. Other benefits add to the program's value.

For many years the Public Works Department did offer some assistance to property owners faced with the problem of removing stumps along the parkway or boulevard strip between the street curb and sidewalk. This consisted of lifting out the stump and hauling it away after the property owner had excavated around and under the stump and cut enough of the roots for easy removal. We made no charge for this service.

Over the years many trees in the parkway had been cut down for various reasons. In most cases a chain saw had been used, with the cut made as close to the ground as possible. Only a few people undertook the task of digging out the remaining stump. Others resorted to whittling away at the stump with an axe, burning it from the top down, or drilling holes in the stump and applying chemicals to accelerate disintegration. Seldom did these methods result in a satisfactory job, and in most cases the stump was left intact to mar the appearance of the parkway.

Aldermen Investigate

In view of the interest of abutting property owners in improving the parkway strip, which is part of the street right-of-way, several aldermen felt that the city should take some action. The expenditure of city funds was justified in that the work would be on city property.

Research revealed that others had tried many types of stump removal equipment but a Vermeer stump cutter showed the most promise. On a trial basis we hired two retired city employees of an adjacent city who owned such a machine and were engaged in the stump-removal business. These men went to work on several troublesome stumps while several aldermen watched the operation. At the next budget time, these alderman provided the impetus to include funds [illegible] machine: in June 1959 we purchased a Vermeer Pow-R-Stump Cutter.

[illegible] capable of cutting a stump ten inches below the level upon which the tires rest. A larger machine is available that will cut 18 inches below grade. With either machine the cut below actual grade can be extended by excavating around the stump to permit the machine's wheels to be placed at a lower elevation.

The unit, mounted on two pneumatic tires, consists primarily of an air-cooled gasoline engine supplying power to operate a cutting wheel and hydraulic pump. The pump provides pressure for hydraulic movement of the cutting wheel either horizontally or vertically.

We use a Willys Jeep to tow

---

* Mr. Duszynski has served as Director of Public Works for the City of Appleton since 1954 and prior to that held the same position in Cudahy, Wis.

Thanks, Mr. Duszynski!

Mr. Edwin Duszynski, Director of Public Works in Appleton, Wisconsin, tells of his experience with the Vermeer Pow-R-Stump Cutter in the above article from the June issue of American City Magazine. "The most economical method of stump removal I know of," is the way he describes the action of the powerful model 10 Pow-R-Stump Cutter. This is just one of hundreds of outstanding recommendations received each year from cities, parks, golf courses, cemeteries and tree service firms all over the country.

PATENTED VERMEER POW-R-STUMP CUTTER MAKES CHIPS OUT OF STUMPS IN MINUTES

You'll save hundreds of man-hours and thousands of dollars annually when you remove ugly stumps with the Pow-R-Stump Cutter. Removes any size stump in minutes. It is an easy one-man operated unit. Allows close quarter cutting to sidewalks, buildings, curbs and driveways without damage. There's ONLY ONE POW-R-STUMP CUTTER . . . ask for a FREE demonstration. (Registered under U.S. Patent No. 2912022.)

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VERMEER MANUFACTURING CO.
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Purchasing

(Continued from page 163)

formance certified" quality features found in the standard Onan 105AK and 205 AJ Series, according to an announcement by Onan.

The control automatically provides positive speed control; reduces engine speed to 1800 rpm at no load; automatically increases engine speed as load is applied; lengthens engine life; reduces gasoline and oil consumption; reduces maintenance, and noise level at idle speeds.

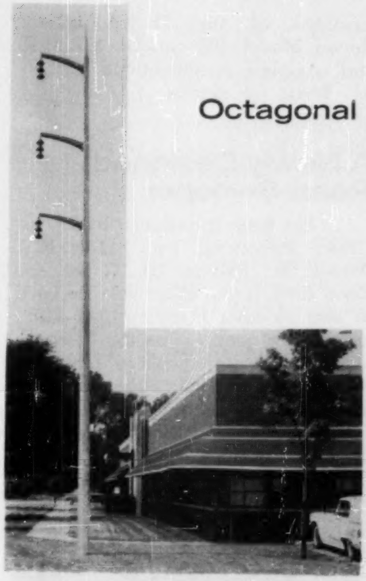
Conversion kits, to equip units in the field with idle-MATIC control, are available. For further information, write ONAN DIVISION, STUDEBAKER-PACKARD CORP., 2682 UNIVERSITY AVE. S.E., MINNEAPOLIS 14, MINN.

Wald Gives Award

The Traffic Engineering Department of Arlington County, Va., and the operator of the county's "push-button" pavement marking machine have received a special award from Wald Industries, Inc., of Huntingdon, Pa., for outstanding maintenance of publicly-owned equipment.

The county purchased the first "Town and County" marking machine Wald made on March 18, 1958. It has been in steady use since that time and has been operated and maintained by Joseph A. Garrison, equipment operator. It has been used to put down over 113 miles of centerline, lane line, pedestrian crosswalks and stop bars each year. During its more than two years of steady use, only $29.80 has been spent for replacement parts.

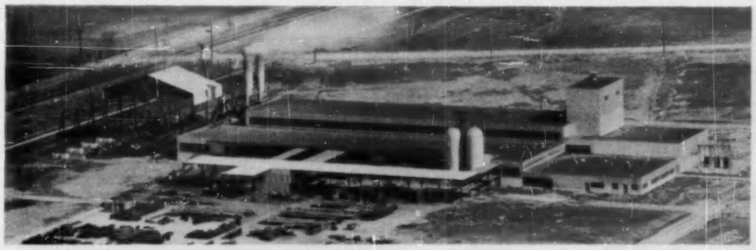
Members of the Arlington County Traffic Engineering Department receive from Maxwell H. Corbin, left, regional sales manager of Wald Industries, Inc., Certificates of Merit award for outstanding maintenance of the county's striping machine. Center is Joseph A. Garrison, equipment operator, right is Henry Hulme, traffic engineer.



Octagonal Lighting Pole

A new 85-foot aluminum, unguyed, Alrectic octagonal pole extends the line of transmission and distribution equipment of LINE MATERIAL INDUSTRIES McGRAW-EDISON CO., MILWAUKEE 1, WIS. For application at voltages up to 230 kv, it provides excellent utility routing for lines through congested areas where right of way, ground clearances and esthetic beauty are problems. The Alrectic pole meets all AIEE and NEMA specifications. It features high strength, light weight, corrosion resistance, low maintenance and safety, and may be used as a floodlight standard in athletic fields.

First Foundry for Construction Castings



Neenah Foundry Company's plant #2 Neenah, Wis. pictured above is probably the only foundry ever built specifically for the production of gray iron and ductile iron construction castings, according to E. W. Aylward, president. In operation since June 1, the new foundry raises Neenah's total production capacity to an impressive 500 tons daily, making it one of the nation's largest independent foundries.

New Truck Towing Hitch

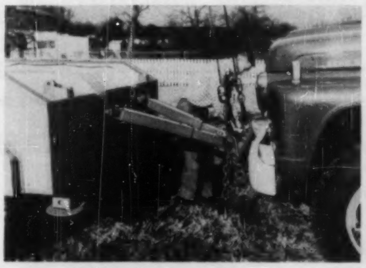
The latest development in Holmes wrecker equipment is a new heavy duty towing hitch designed for extra heavy work, and when used with a wrecker capable of rendering such service, provides a very fast, safe means of handling even the largest and heaviest trucks.

"Use of this Holmes equipment will solve many of the difficulties now encountered by heavy duty wrecker operators in the towing of disabled trucks", said Lynn D. Churchwell, sales manager.

To simplify removing heavy disabled trucks Holmes engineers have developed the TH 290 Truckmaster towing hitch which is patterned after the Holmes T.S. 100 towing sling, with a v-type spacer bar.

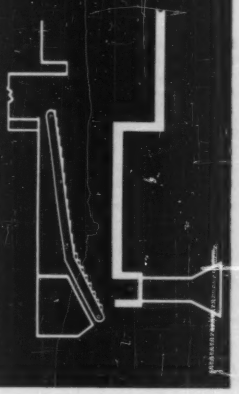
The hook-up for towing can easily be accomplished with considerable speed by heavy duty telescopic

(Continued on page 166)



HAVE YOU INVESTIGATED THE NEW
Nichols Fuller®
reciprocating grate stoker?

Write for
Bulletin
No. 242



Nichols Engineering & Research Corp.
80 Pine St., New York 5, N. Y.
INDIANAPOLIS SAN FRANCISCO MONTREAL

(Continued from page 165)

spacer bars which automatically snap into locked position as the disabled vehicle is raised by the tow truck. When in-tow, the v-type spacer bars hold the disabled vehicle in a fixed position, thus assuring maximum security and mobility of action for towing and completely eliminating the danger of swaying.

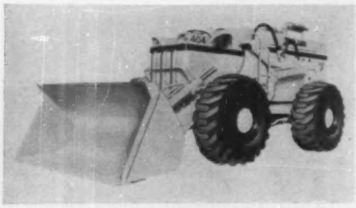
Towing from an apex behind the wrecker provides a very sharp turning radius which permits the disabled vehicle to be backed into close places with the same ease as a trailer.

The new heavy duty towing hitch may be readily adapted to any wrecker.

For further information, write to ERNEST HOLMES CO., 2505 E. 43RD ST., CHATTANOOGA 7, TENN.

New Tractor Shovel Available

Shipment of its new improved Trojan Tractor Shovel Model 404 from its Batavia, N. Y., facility was announced recently by Robert G. Allan, general manager of the TROJAN DIV. OF THE YALE & TOWNE MFG. CO., BATAVIA, N. Y.

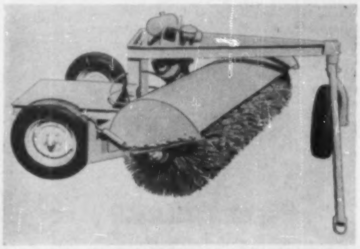


The new model 404 tractor shovel designed for greater horsepower and stability is now available from the Trojan Div. of Yale & Towne Mfg. Co.

Refinements to Model 404 were designed to increase its utility on round-the-clock production jobs. Among these improvements are: new engine options with greater horsepower. Tire options have been increased to permit a wider selection of sizes and types to better match ground conditions. Powered by either the General Motors 8V71 with 264 horsepower or the Cummins NH 250 developing 250 horsepower, the new Model 404 features the functional styling introduced last year to the Trojan line. Demonstrations of the Trojan tractor shovel Model 404 can be arranged and complete specifications provided. Write for details.

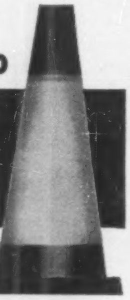
A Newly Designed Road Sweeper

. . . has been introduced by LITTLE GIANT PRODUCTS, INC., 1530 N.E. ADAMS ST., PEORIA, ILL. Called the Road Bird, it can effectively be used in two sweeper combinations. Used with truck, jeep or tractor it serves as a simple, inexpensive tow-type sweeper. The independently-powered brush assembly with brackets



The new Road Bird may be used as a front-end or a tow-type sweeper.

HERE is the answer to EMERGENCY BARRICADES

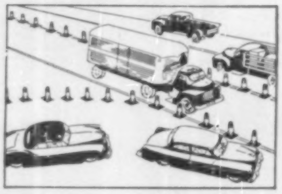


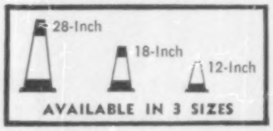
Lightweight, Easily-Adaptable

SAFE-T-CONE
TRAFFIC GUIDES

SAFE-T-CONES are proven and accepted by Federal, State and Municipal traffic authorities in hundreds of major cities ...for traffic channeling, utility repairs, line painting and emergency blockades.

SAFE-T-CONES are easily adaptable to all situations at a moment's notice. Special construction allows them to be "stacked" in small space.

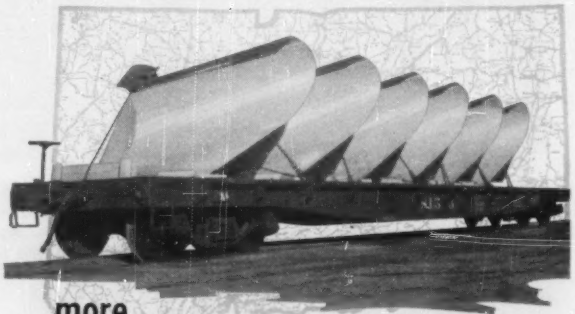




Solid-Color PVC* POLY-CONES—18-inch and 28-inch sizes. Outlasts ordinary cones without upkeep!

*Poly-Vinyl Chloride

For full information write
RADIATOR SPECIALTY CO., CHARLOTTE, N. C.



more . . .
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are off to Connecticut . . .

Rugged GLEDHILL SNOW PLOWS will do Connecticut's job best!

When you're dealing with public highways you're committed to do the best possible job. Connecticut chose Gledhill Snow Plows to handle their snow removal problem.

GLEDHILL *America's first choice in* **SNOW PLOWS**

THE GLEDHILL ROAD MACHINERY CO., Galion, Ohio

mounted on a truck, Jeep or tractor, serves as a front-mounted sweeper. It is the only 2 in 1 sweeper combination made.

Front-mounted brush assembly of 6, 7, or 8 foot and 7.4 or 11.5-hp Wisconsin engine, easily is attached or detached as a unit by removing one pin.

Brushes are of tough, long-wearing palmyra fibre. Steel brushes are available. Optional accessories include electric starter, 4-wheel chassis, sprinkler system and pump, water tank up to 150 gallons, and dust shield for dustless operation.

Trim, Neat, Efficient

Ford's 1961 trucks include a very extensive line of heavy duty, diesel and gasoline powered models. Wilbur Chase, truck marketing manager for Ford Division, emphasized functional design of components, rather than gingerbread styling. For instance, the trucks have single headlights to reduce headlamp replacement costs by 50% and redesigned hoods and front end sheet metal to permit easier access to engine compartments.

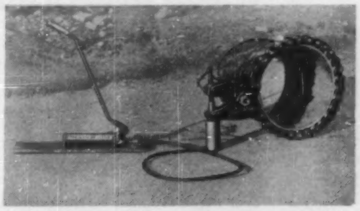
For illustrated printed matter write Ford Division of Ford Motor Co., P. O. Box 608, Dearborn, Mich.

Ford's integral cab and body F-100 Styleside pickup.

New Pipe Cutter

The Wheeler Manufacturing Corp., Ashtabula, Ohio, announces a new "Super" hydraulic pipe cutter designed for use on 10 through 20-inch diameter cast-iron water mains. It employs the Wheeler "squeeze and pop" principle used on all models of their pipe cutter.

The cutter requires no accessory, is readily installed on the pipe by two men and the pipe is then quickly and easily cut by one man. On display at the recent Public Works Equipment Show in New York, the cutter cleanly severed a 4-foot length of 16 inch cast iron water pipe in just 33 seconds.



The new Wheeler "super" pipe cutter was designed to sever large diameter water pipe.

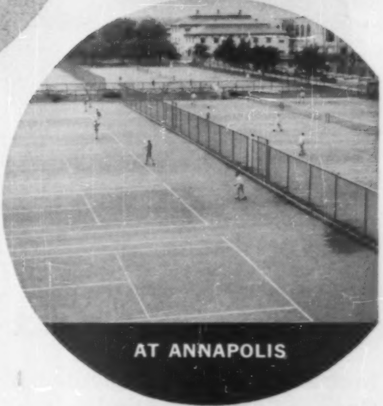
Communicate While Wearing Mask

A lightweight, compact, powerful speaking device called the Voice-Pak, designed for use with protective breathing equipment was introduced by Scott Aviation Corp., 191 Erie St., Lancaster, N. Y.

With this device the voice is transmitted through a small, powerful microphone to a waterproof

(Continued on page 168)

AT COLORADO SPRINGS



AT WEST POINT

LAYKOLD TENNIS COURTS

When it comes to tennis courts the armed services of our country are truly unified—they are in accord in selecting Laykold all-weather courts. In addition, a recent survey reveals that these same minimum-maintenance courts are installed on 65% of the military posts and bases, nationwide.

Courts that merit installation at our three major military schools deserve your consideration. Get complete information from our nearest office.

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Cincinnati 38, Ohio | St. Louis 17, Mo. | Oakland 1, Calif.
Atlanta 8, Ga. | Tucson, Ariz. | Inglewood, Calif.
Mobile, Ala. | Portland 8, Ore. | San Juan 23, P. R.

BITUMULS® Emulsified Asphalts • CHEVRON® Paving Asphalts
LAYKOLD® Asphalt Specialties • PETROLASTIC® Industrial Asphalts

(Continued from page 167)

speaker attached to the belt. The unit is completely transistorized and comes with pen-light type batteries, Scottoramic mask with nosecup, breathing tube and regulator coupling.

It transmits the voice clearly, bringing new safety to those who must enter hazardous atmospheres. It enables firemen, chiefs and rescue squads to communicate while wearing mask equipment even under very noisy conditions.

Waste Receptacles May Be Leased

Large-scale users of waste receptacles for litter, such as municipalities, can now economically lease Weathermaster waste receptacles from the Superior Metalware Div., John Wood Co., 509 Front Ave., St. Paul, Minn.

Under the new plan costs are amortized over an extended period, enabling the user to obtain receptacles to cope effectively with litter problems without heavy capital investment. They may choose model and sizes and include delivery costs in the plan.

PUSH
FOR RENT

Superior Metalware Div., of John Wood Co. announces that its Weathermaster waste receptacles may now be leased.

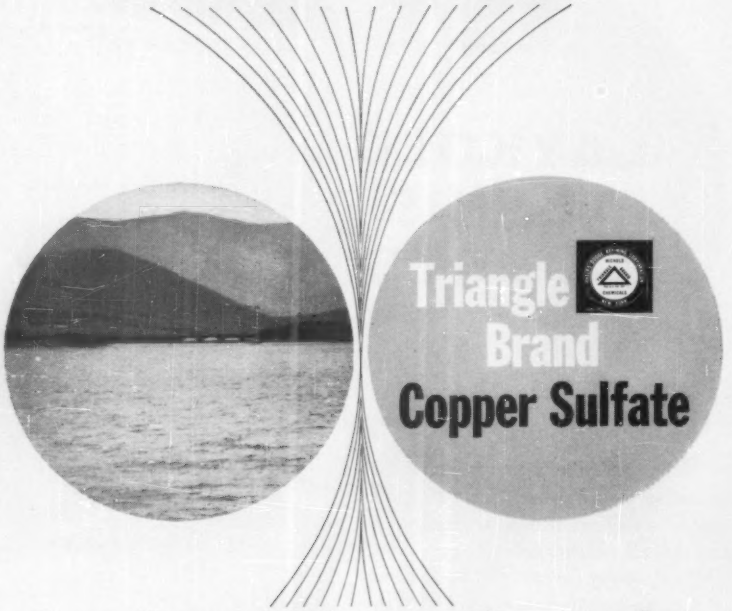
A new metal-treating process now provides rust-resistance to the Weathermaster. Called "galvanealing," the process impregnates the steel body of the receptacle with a bonded zinc coating that is more durable, harder to penetrate and more protective than conventional galvanizing, according to Frank Aymond, sales manager. It is also rainproof, snowproof and fireproof. Write the company for additional information.

Concrete Cutting Saw

A self-propelled Tri-Line concrete cutting saw which has full hydraulic power for raising and lowering the cutting blade is offered by Engineered Equipment, Inc., Waterloo, Iowa. The blade can be pre-set to proper cutting depth and returns automatically whenever the

The Tri-Line concrete cutting saw has blades available for cutting either concrete or blacktop.

control



for algae and aquatic weeds

In small amounts, Triangle Brand Copper Sulfate controls algae growth and kills some of the more troublesome aquatic weeds. They disintegrate where they are, which prevents downstream infestation or clogged waterways.

In sewage pipes, Triangle Brand Copper Sulfate can be used in such low concentrations to control root and fungus growth that surface trees remain unaffected.

Two informational booklets, "The Use of Copper Sulfate in the Control of Microscopic Organisms," and "Copper Sulfate for Root and Fungus Control in Sanitary Sewers and Storm Drains," available on request.

Phelps Dodge Refining Corp.
300 PARK AVENUE, NEW YORK 22, N.Y.

machine renews cutting operation.

A tricycle undercarriage assures easy maneuverability and all controls are located within easy reach of the operator. The saw is powered by 2 and 4 cylinder, air-cooled gasoline engines, and adjusts to any desired cutting speed from —0′ to 25′ per minute.

The company offers a complete new line of segmented diamond and abrasive blades for cutting of concrete and blacktop. Write the company for complete details.

Does More Than Thaw Pipe

New attachments for the famous Trindl Therm-O-Tron pipe thawer, gives the thawer year 'round uses.

You can solder sheet metal seams in duct work, down spouts and gutters. You can sweat copper tubing and pipe, and solder, preheat, and braze.

The manufacturer also produces a complete line of electric arc welding machines. Write: TRINDL PRODUCTS, LTD.; 1807 S. CLARK ST., DEPT. 29 PT, CHICAGO 16, ILL.

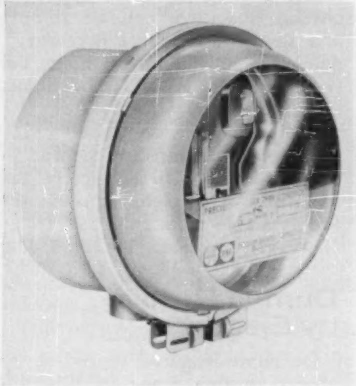
Tractor-Shovel for City Street Work

A versatile piece of equipment now serving Leawood, Kans., is this recently purchased Model H-50 Payloader tractor-shovel with 5000 pounds operating capacity. Along with the regular bucket the City of Leawood purchased the snow plow, v-blade, Ram sweeper, and Ram asphalt spreader attachments.

Here the unit with spreader attachment is repairing blacktop streets. During an eight hour day, the Payloader will apply and roll up to 60 tons of material. Crew Superintendent Paul Mayers said, "With our complete set of attachments, we can do anything our city street work demands."

Further information may be secured from FRANK G. HOUGH CO., 710 SUNNYSIDE AVE., LIBERTYVILLE, ILL.

Standard Mounted Street Light Control



Tubeless control in meter-type housing.

Identical with Precision photo controls for lighting presently used on 400,000 installations, tubeless controls mounted on a standard watt-hour meter base plate and enclosed in a shallow glass housing are now offered by PRECISION MULTIPLE CONTROLS, INC., RIDGEWOOD, N. J.

In operation, a cadmium sulfide photo cell behind the meter face activates a bimetal switch to turn lights on automatically at sunset and off at sunrise. A lightning arrestor completes the simplified circuitry enclosed in the all-weather housing that is interchangeable with all other meter socket controls and clocks currently in use.

New Highway Dividers

An all new flexible material which has been developed for highway dividers has just been released to Pylacon, Inc., Toledo, Ohio. The divider is extruded from a special butyl polymer compound impregnated with federal yellow. It is easy to handle and store, withstands years of abrasion and resists severe weather conditions.

It has the advantage of coming in

(Continued on page 170)

ALL NEW!
FULLY
TRANSISTORIZED
Detectron
PIPE DETECTOR

Model "808"

In addition to the famous model "505" Detectron now offers its completely new model "808" with the first circuitry developed specifically for use with transistors. It is NOT merely an adaptation of earlier tube circuits.

Efficient under every known operating condition, effective in varying temperatures, thoroughly proven and trustworthy. Superior performance and reliability guaranteed.

EXCLUSIVE FEATURES

- ▲ Detects Deeper by all comparisons
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Purchasing News

(Continued from page 169)

16-foot lengths which may be cut to fit any need. It is easily and quickly installed, can be removed and re-used. It is not necessary to patch the surface after it has been removed and it will not damage snow plows.

The dividers are anchored to pavement with mushroom head anchor rods or with an epoxy resin material. Complete specifications are available from PYLACON, INC., 48 N. WESTWOOD AVE., TOLEDO 7, OHIO.

Dumps Refuse by Ejection

Over one hundred representatives of distributing firms in Wisconsin, Illinois, Indiana, and Minnesota attended a distributor meeting in Milwaukee to introduce the new MARK II Colectomatic refuse collection truck body line made by the Heil Company.

Advantages of the new refuse collection truck are unloading by ejection rather than dumping, a detachable container dumping mechanism, "Duo-Press" compaction of refuse, and pushbutton controls.

N. Y. Police Get 225 Dodge Darts

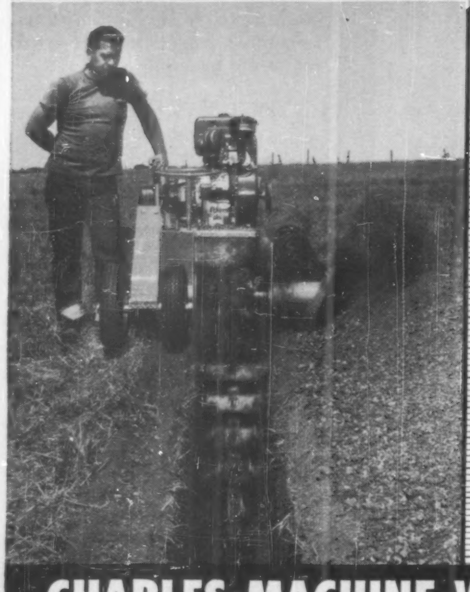
Dodge recently delivered 225 specially-equipped Dodge Darts to the New York City Police Department for patrol and other police duties. The first of the cars, which include a number that are unmarked were put into service for the unprecedented task of protecting Soviet Chairman Nikita Khrushchev, Cuban leader Fidel Castro and other

Two new Dodge Darts, part of 225 ordered by the New York City Police Department, parked in front of the United Nations Building as a police force larger than that of many small countries was mobilized to guard Khrushchev, Castro and other heads of government attending U. N. session.

DITCH WITCH TRENCHER

The measure of Success

CALL COLLECT



COMPARE

SIZE: DIGS FROM 4" TO 16" WIDE AND UP TO 6' DEEP

COSTS: AS LITTLE AS 2c PER FOOT!

ABILITY: JOB PROVEN!

LIFE: AS HIGH AS ½ MILLION FEET!

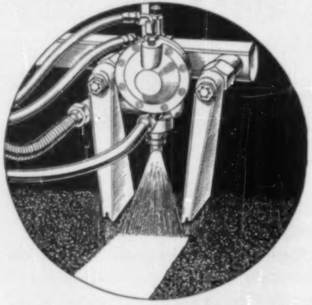
EASE OF OPERATION: See a demonstration!

CALL COLLECT!

CHARLES MACHINE WORKS, INC.

603 BIRCH ST. • CALL COLLECT, FE 6-4404 • PERRY, OKLA.

New Kelly-Creswell Spray Gun Makes Road Striping Easier



Kelly-Creswell Company, Xenia, Ohio, has a new automatic striping gun for use on highway and industrial road marking equipment. Gun is patented. The gun is diaphragm-operated which eliminates the air cylinder and upper packing gland found in most spray guns. This eliminates the greatest cause of air loss in automatic spray guns. The new gun requires about 25% less air to operate at peak efficiency.

The gun is being installed on all the various types of striping equipment made by Kelly-Creswell. Also available as a replacement part.

Kelly-Creswell is a pioneer manufacturer of a complete line of road-marking equipment—truck-mounted, power driven and hand operated.

For more details, see pages 921 through 924 of the 1960 Municipal Index, or write to:

Kelly-Creswell Company
Xenia, Ohio

heads of government attending the U. N. general assembly session in New York recently.

Delivery of the 225 vehicles comprised the largest single order of Dodges ever made to a municipal police group. A brochure describing the Dart Pursuit is available from DODGE DIV., CHRYSLER CORP., Box 1259-D, DETROIT, MICH.

New Conveyorized Production Plant

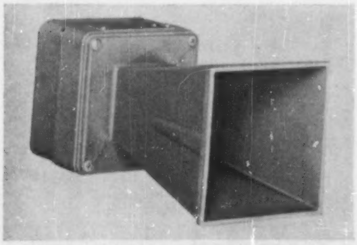
A new $350,000 modern, conveyorized truck body production plant is now under construction by the Boyertown Auto Body Works at Boyertown, Pa., and will be completed in January 1961. Paul R. Hafer is company president.

New Program Timer

A program timer, known as the Model SP-1, is now being manufactured by the LATHEM TIME RECORDER CO., 76 THIRD ST., N.W., ATLANTA 8, GA. The purpose of this unit is to sound a bell or horn on pre-determined schedules to announce the start and end of work schedules.

It can be set to ring as close as one minute intervals, and as many signals as needed may be programmed. A manual push button on the timer will also enable signals to be made at other than scheduled times. Thus, it can be used for coded signals, or as an alarm in case of fire.

The timer is low in cost. Bells and horns are also available which can be regulated to desired volume. A number of horns can be sounded from one SP-1 timer. The device will be useful when scheduling work periods or when programming processes such as needed in sewage treatment.

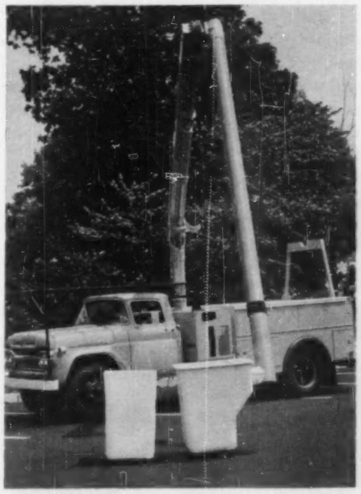


The horn pictured here when regulated by the Lathem program timer, Model S-1, can be adjusted to provide the volume tone required. It operates on 115 volt current without a transformer.

Basket Liners Ease Aerial Basket Testing

Dielectric safety is now assured for the man in the aerial basket by the use of a newly developed basket insert liner, according to the ASPLUNDH CHIPPER CO., 501 YORK RD., JENKINTOWN, PA. It is said to eliminate the costly and difficult task of scheduling testing on the basket itself. The liner is inexpensive, simple to store, easy to handle and inserts in a few minutes without tools. It is tested by an independent testing laboratory and certified to 50,000 volts, or higher as desired.

The company also offers dielectric safety with its boom and pylon mast.



New Wall-Mounted Chlorinator

A wall-mounted chlorinator, 3600 series, has been developed by the Fischer & Porter Co., Warminster, Pa., for use in municipal and industrial water and waste treatment facilities and large municipal swimming pools.

It features a safety stack regulator within which all control components are housed. Other features are: a shut-off valve, sealing chlorine supply from the chlorinator during inoperative periods; an isolating valve, which seals tight the functional parts of the safety stack and prevents even traces of water from entering the chlorinator; a differential pressure regulator to maintain stable drift-free chlorine gas feed despite wide variations in chlorine gas pressure, water supply

(Continued on page 172)

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economy . . .

. . . flexibility

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Gentlemen: Please have a representative contact me. I am interested in:

Description: ....
....
....
NAME ....
STREET ....
CITY .... STATE ....

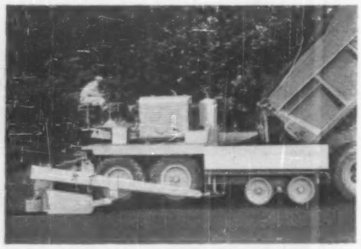
(Continued from page 171)

pressure, or pressure at the point of application.

For more information on the 3600 series, write Fischer & Porter Co., 670 Jacksonville Rd., Warminster, Pa.

New Bituminous Finisher

The T. L. Smith Co., 2835 W. Vliet St., Milwaukee 8, Wis., has acquired manufacturing and sales rights for a complete new line of asphalt finishers. The first will be called the Mark IV and will have over a 400-ton-per-hour capacity. It offers improvements not previously available on asphalt paving machines. It has rubber tires for smoother, faster operation at paving speeds up to 102 feet per minute and travel speed up to 10 mph. In addition front- and rear-wheel steering provides exceptional maneuverability and ease of handling.



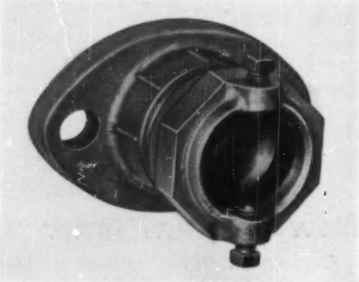
The new Mark IV finisher, marketed by T. L. Smith Co., lays asphalt up to 102 feet per minute.

Paving around sharp curves, next to curbs as well as over broken pavement is said to be fast and uniform. Other features are: swept-back screed for fast, even distribution; a swinging operator's platform for unobstructed visibility to right or left; extra flotation with large pneumatic tires; it enables trucks to unload mix without spilling; and moves load to the conveyor without hand shoveling or prodding.

A second unit in the line will be available in 1961.

Couplings for Flanged Meters

A new Pack Joint Coupling made by the Ford Meter Box Co., Inc., Wabash, Ind. provides installation of 1½ and 2-inch flange meters without threading or soldering. By means of a compression nut, a rubber gasket is sealed against the outer wall of the pipe at whatever point will give proper spacing for the meter. The joint is then locked to iron pipe by means of stainless steel set screws as shown in the illustration, or, in the case of copper pipe, it is locked by means of an integral clamp.

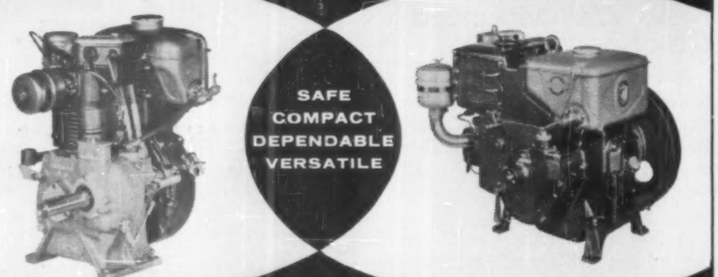


Easier installation of flanged meters is made possible by Ford Meter Box' new Pack Joint coupling.

BIG JOB... SMALL ENGINE?

YANMAR

DIESEL DOES IT!



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COMPACT
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4-Cycle — AIR-COOLED — Single Cyl. 2 to 4½ BHP — 2000/3000 RPM. LIGHT WEIGHT — EASY STARTING. Especially recommended for PORTABLE & EMERGENCY EQUIPMENT.

A Precision Product of the New Japan. Made to U.S. specifications by the world's largest manufacturer of small diesels. COMPLETE ACCESSORY LINE. All engines and parts stocked in the U.S.A.

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STOCK this useful tool for every service CAR and CALL • Speed • Locating • Keep Customers Happy

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AQUA SURVEY & INSTRUMENT CO.
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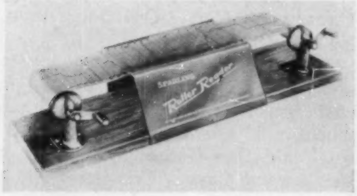
New Easy Handling For Strip Charts



The new Roller Reader permits easy, efficient office handling of water and sewerage plant strip chart records without the need for spreading them out on desk tops or work tables.

With the new unit a 60 or 120 day chart may be scanned in its entirety. The roll is attached to two spindles and may be cranked in either direction to allow study of specific periods of operation. A sturdy metal platform permits notes to be entered in appropriate sections. Portions containing significant operating data may be clipped from the chart and cataloged for ready reference. The remaining chart can be spliced together and stored separately.

For further information write Hersey - Sparling Meter Co., El Monte, Calif.

New Fire Tanker

An improved model fire tanker is being offered by Baughman Mfg. Co., Inc., Jerseyville, Ill., which is especially built and outfitted to meet fire protection needs of small towns. It has a low center of gravity that allows faster speed and greater mobility over rough terrain. Tanks in capacities up to 300 gallons are available; all feature rust-proof welded steel construction. Tops are

(Continued on page 174)

Clean Water Meters now in FIVE Minutes —

with VAPOR BLAST **Liquid Honing***

. . . no acids, solvents, scrapers, wire brushes

Meters and parts at Milwaukee Water Works before and after Liquid Honing.

Modernize *your* meter cleaning — with Vapor Blast LIQUID HONING! Removes dirt, discoloration, scale, paint from corners, crevices, internal parts, chambers, thoroughly and effectively, with *no possibility* of scratching, scoring, or change in precision tolerances. Completely cleans a meter and all parts in less than FIVE minutes . . . Delivers cleaner, brighter water meters that look like new — to build customer satisfaction and confidence in your water meter department *economical* replacement program.

VB Liquid Honing is proving itself in Milwaukee, Cincinnati, and in towns in New Jersey, Georgia, Florida. Get the whole time-saving, money-saving story on VB LIQUID HONING in meter cleaning — or send a meter for Free laboratory demonstration cleaning.

*Vapor Blast and Liquid Honing are Trademarks

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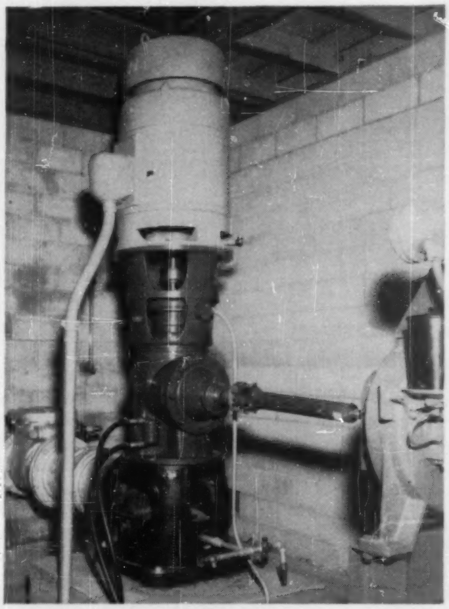


NEW! Automatic combination gear drive

JOHNSON Redi-Torq®

Redi-Torq combination right angle gear drive with automatic clutch, eliminates manual switch-over to engine drive in case of power failure. Drive couples to engine by flexible shafting or couplings—engine clutch unnecessary. Engine may be tested without interfering with electric motor operation of pump.

For round-the-clock protection against power failure in water, sewage and fire installations. Developed and proven in municipal and industrial use over several years.

Sizes: 15 to 200 hp; hollow or solid shafts. Write for engineering catalogs.

JOHNSON • MAKERS OF FINE GEARS SINCE 1904
GEAR & MANUFACTURING CO., LTD.
8TH AND PARKER STREETS • BERKELEY 10, CALIFORNIA

MEMBER OF AGMA

East and Gulf Coast representatives:
Smith Meeker Engineering Co., 157 Chambers St., New York City

13-R

(Continued from page 173)

removable to facilitate cleaning.

A self-priming, PTO-operated pump discharges water at the rate of 200 gallons per minute and operates while moving, an advantage when fighting grass or forest fires.

A suction hose and strainer permit water supply to be replenished from any available source. All extra equipment necessary for firefighting efficiency is furnished with the fire tanker. Complete information can be obtained from BAUGHMAN MFG. CO., INC., JERSEYVILLE, ILL.

Improved Street Sweepers

The appointment of John A. Haaker to the position of general manager of the Mobil Sweeper Division has been announced by The Conveyor Company of Los Angeles. Mr. Haaker was formerly western regional sales director for the division. The appointment coincides with a policy, instituted early in 1960, to develop new and better sweepers for street sanitation departments of municipalities. “The Mobil Sweeper Model TE” Mr. Haaker states, “with its two engine concept is an example of how greater sweeping efficiency and economy can be achieved through product improvement. We at Mobil Sweeper are dedicated to the belief that modern engineering can produce better mechanized street sweepers to offset the steadily rising costs of operating municipal street sanitation departments. The enthusiastic response to the two engine sweeper this year indicates that municipal officials are giving serious thought to the improvement of equipment.”

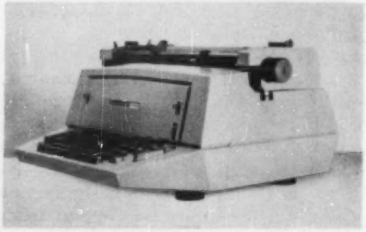
John A. Haaker

Underwood's Four New Typewriters

New electric and manual office typewriters have been unveiled by UNDERWOOD CORP., One Park Ave., New York 16.

“We find many situations where operator fatigue is not a significant cost factor, and where a manual machine is adequate and economical,” said Ugo Galassi, President of Underwood Corp. “Conversely, it is false economy to get by with manual machines when electric typewriters are called for. We felt it was our responsibility to our customers to provide a complete line of electric and manual equipment.”

The electric RAPHAEL produces



The Underwood Raphael

BEST BUY IN WATER STORAGE
PRESTRESSED CONCRETE TANKS

2,000,000 gallons—Cedar Hills Reservoir, Ridgewood, New Jersey

- ***minimum maintenance***
- ***75% construction cost spent locally***
- ***architecturally modern***
- ***longest service life***
- ***lowest overall cost***

In the development of residential and industrial water supply facilities today, no other type of tank offers so many advantages as does the Prestressed Concrete Tank. Modern in engineering and design, proven in service, lowest in cost... prestressed concrete should be considered in any tank planning.

Send for Bulletin T-22.

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Tel.: EDgewood 3-4040

THE CANADA GUNITE COMPANY, LTD.
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A. **STEIERT** & Son, Inc.
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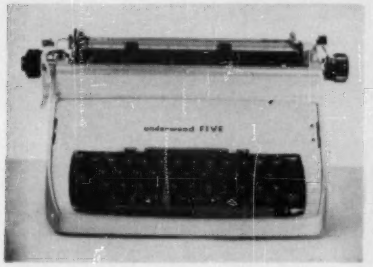


typescript with the sharpness of fine printing. This is achieved by each character being alloted the space on the paper that its size requires.

The electric FORUM features the standard typewriter spacing. Using either carbon or fabric ribbon, this machine is for print work that must have outstanding quality.

The electric SCRIPTOR is for general purpose typing.

The new standard typewriter (shown above) is the TOUCH-MASTER FIVE, a light-touch manual machine.

Underwood is offering a complete line of desk-size business machines, including a full line of adding, calculating and accounting machines.

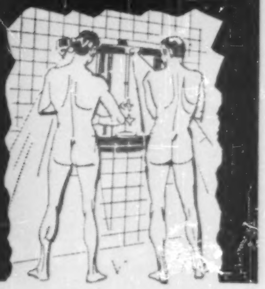
Attractive Trash Receptacles

New attractiveness for the lowly trash container is achieved in these Alan Berni designs with a sculptured look and colors chosen to blend with home exteriors. Loma Industries' #364 32-gallon container, approximately $14.95 at leading department and hardware stores, needn't be hidden away; it's attractive enough to stand proudly beside your home. Available in burgundy red, antique gold, flagstone grey and forest green. Lifetime lightweight Lomaware polyethylene is scratch resistant, does not retain odors or stains. These receptacles are made by Loma Industries, Fort Worth, Texas.

NEW ECONOMICAL SHOWERS

BRADLEY

WALL-MOUNTED TYPE
THREE- OR
TWO-PERSON UNITS



Here's another Bradley Multi-Person Shower—the new Wall-Mounted Type—two or three showers in one self-contained unit.

You can have Showers at low cost because installation on wall at any height requires but *one set of piping connections*—no floor space is needed and each bather has individual control of water volume and temperature.

Made in stainless steel or enameled steel (in white and six decorator colors)—attractive, self-contained and assembled. For dimensions and other data see page 2 of new Shower Bulletin H-1322. Copy mailed on request. BRADLEY WASHFOUNTAIN CO.
2333 West Michigan St., Milwaukee 1, Wis.

Bradley

BRADLEY
multi-person showers

Write for
Bulletin H-1322

GOLDAK TRANSISTORIZED LOCATORS

Pipe Locator-Leak Detector

"Dualtronic"

Model LC-5T

The new "Dualtronic" combines the finest transistorized Pipe Locator ever developed with a high-gain Leak Detector to produce an effective and useful multi-purpose instrument. Designed specifically for Municipalities and Water Companies, the LC-5T assures pin-point detection of pipes, cables, mains and laterals and becomes a sensitive detector for water leaks simply by plugging in a crystal, rubber-encased microphone. Additionally, by a simple manipulation the new "Dualtronic" will pin-point valves, risers, boxes, and manhole covers. Now with transistors the versatile LC-5T is lighter, more sensitive, easier to operate, and it requires only flashlight batteries . . . Write today for further details on the "Dualtronic" and other Utility detection instruments.

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Leading Electronic
Manufacturers
Since
1933

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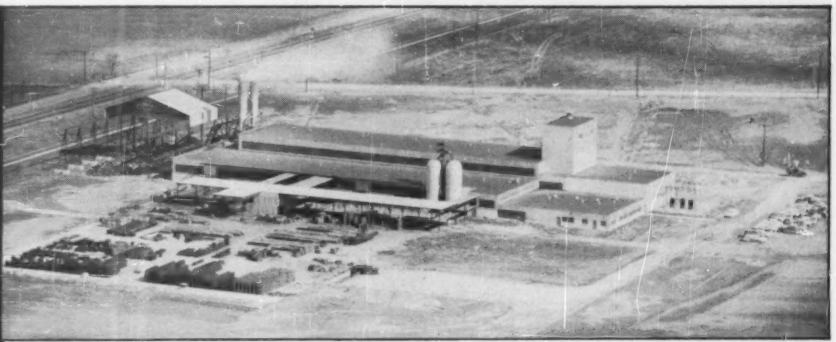
Glendale 1, Calif.

WORLD'S FINEST DETECTION EQUIPMENT MANUFACTURERS SINCE 1933

500 TONS OF CASTINGS DAILY!



With the recent opening of plant #2, shown above, our production potential of Gray and Ductile Iron Construction and Industrial Castings has now reached a maximum of 500 tons daily. This capacity, plus 15,000 patterns, plus a good on-hand supply of standard castings, plus 90 years experience in the business, is your assurance of prompt delivery, superior quality, complete uniformity and practical economy.

* * *

New and fully illustrated 168-page catalog of construction castings will be sent promptly upon request.

NF

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offers important advantages over sand and quartz

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ABOUT PEOPLE

William H. Searight, chairman of the board and chief executive officer of Cataphote Corporation, Toledo, Ohio, announces the election of Charles E. Searight, Jackson, Miss. as president.

Charles Searight

Charles Searight reports that sales of Catatherm, a long-wearing thermoplastic for highway and airport striping, reached an all-time high in 1960 and that orders for 1961 indicate an increasing number of interstate, cities and federal authorities are now buying this thoroughly tested and proven material.

Roy R. Bush

Roy R. Bush, midwestern regional manager, has been elected a sales vice president of **Rockwell Manufacturing Company, Meter & Valve Division,** according to W. F. Rockwell, Jr., company president. Mr. Bush, who was formerly midwestern regional manager, will have his headquarters in the home office, 400 N. Lexington Ave., Pittsburgh 8, Pa.

Henry C. French

Henry C. French has been appointed chief engineer of **Dempster Brothers, Inc.,** Knoxville, Tenn., manufacturers of Dempster-Dumpster Systems. Mr. French has been in the Dempster Engineering Department for twelve years, the last year as assistant chief engineer.

In a move to serve Nordberg customers in the Great Lakes District with increased efficiency the appointment of George J. Wooldridge as sales engineer and Alden G. (Al) Weidenhoefer as service engineer under Mr. Philip Wallach, district sales manager in the Cleveland office, was announced by R. W. Bayerlein, vice president, Engine Div., **Nordberg Mfg. Co.,** Milwaukee, Wis.

Raymond Minichiello has been appointed manager of mobile communications product planning for **General Electric's Communication Products Dept.,** Lynchburg, Va. according to a company announcement. He will be responsible for product development guidance on vehicular two-way radios, portable transceivers, pocket units and associated systems devices.

DeForest S. Holyoake was appointed sales manager of **Unimasco, Inc.,** 424 W. Redondo Beach Blvd., Gardena, Calif. according to company president, F. A. Moon. Mr. Holyoake's immediate aim will be to strengthen and increase the Unimasco dealership organization throughout the United States.

J. C. Laegeler

Mr. G. A. Gilbertson, president of **The Frank G. Hough Co.,** Libertyville, Ill., has just announced the appointment of Jules C. Laegeler as vice-president in charge of engineering. He was formerly chief engineer.

Mr. Laegler, in turn, has announced the appointment of Keith W. Kampert as chief engineer, product design; and Thorvald Granryd as chief engineer, research and development.

W. D. Brumback

William D. Brumback has been named sales manager for **Continental Machinery Corporation,** Compton, California, U. S. distributor for Yanmar diesel engines for marine and land auxiliary use. His appointment was announced by company president Carl B. Hayward.

The appointment of four men to top positions at the pump and hydraulic division of **Fairbanks, Morse & Co.,** 600 S. Michigan Ave., Chicago 5, Ill., was announced by John C. Elmburg, vice president and division general manager.

William F. Walenmaier, who was formerly assistant to the director of marketing and previously managed branch offices in Portland, New Orleans and Chicaga, is advanced to director of marketing at division headquarters in Kansas City, Kans.

Plant manager appointments stem from a vacancy created when Chris E. Clausen was promoted from manufacturing manager at the pump and hydraulic division at Kansas City to general manager of their scale division in Fair Lawn, N. J. The appointments are: C. Harold Johnson, manager of the Kansas City Works; W. Paul McAnally, manager of the Stutgart, Ark. Works; and T. Ray Mackay, manager of the Pomona, Calif. Works.

An expansion program at the Kansas City Works will consolidate manufacture of engineered pumps there. The line of home water systems will now be supplied from the Stuttgart Works. The Pomona Works will continue to produce the well-known Pomona turbine pumps.

C. E. Nelson, Jr.

Mr. James E. DeLong, president for 25 years of the **Waukesha Motor Co.,,** Waukesha, Wis. has announced his retirement. Mr. Charles E. Nelson, Jr., formerly executive vice president, was elected his successor. Other officers elected were Mr. J. G. Swain. vice president, and L. W. Youker, secretary and treasurer. Mr. N. H. Willis was appointed vice president of engineering and Mr. J. J. Kleinbrook was appointed assistant secretary and assistant treasurer. Waukesha manufactures internal combustion engines.

John B. Russell

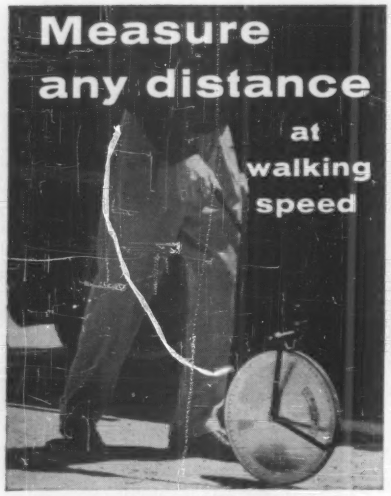
W. Ben Flanigan, vice president, sales of **The Gamewell Company,** announces the appointment of John B. Russell as sales engineer for Connecticut. The Gamewell Co., 1238 Chestnut St., Newton Upper Falls 64, Mass., is a subsidiary of E. W. Bliss Co., and manufactures municipal and industrial fire alarm systems, police alarm systems and precision electro-mechanical equipment; its Rockwood Sprinkler Div., manufactures special hazard fire fighting equipment, sprinkler systems; and its Eagle Signal Div., makes safety and traffic control equipment.

Bill Auger

Roy E. Mullin

C. W. Onan, president, **Onan Division of Studebaker-Packard Corp.,** 2515 University Ave. S. E., Minneapolis 14, Minn., electric generator manufacturer announces four marketing department promotions. Roy E. Mullin, formerly vice president in charge of sales, has assumed broader responsibilities as vice president in charge of marketing. William J. (Bill) Auger, who was sales promotion manager, has been named as-

(Continued on page 178)



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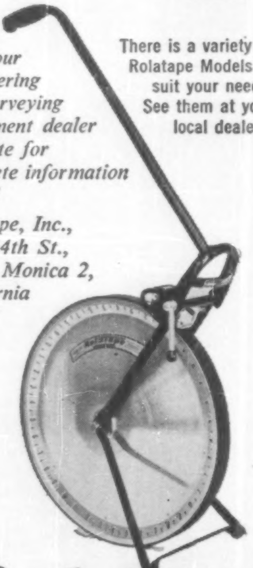
automatically!

It's So Easy to measure with a Rolatape ... and you save time on every estimating job ... no tapes to wind, no helper is required. You get precision-accurate measurements every time.

Records Feet automatically and the accumulated total is always in full view.

Shows Inches, and Fractions of an inch. Wheel is calibrated in inches and fractions for quick easy reading.

Shows Tenths of a foot. Wheel is calibrated in tenths on reverse side for engineers.



There is a variety of Rolatape Models to suit your needs. See them at your local dealers.

See your engineering and surveying instrument dealer or write for complete information today!

Rolatape, Inc.,
1741 14th St.,
Santa Monica 2,
California

Rolatape
Measuring Wheels

About People

(Continued from page 177)

David Onan II

George R. Burda

sistant general sales manager. Reporting directly to the vice president in charge of marketing, Auger's responsibilities include direct sales activities in all Onan markets.

George R. Burda, advertising manager, has been promoted to manager, sales administration. He will coordinate and administer sales policies and programs. David Onan II, manager of product planning, has been given responsibility for advertising, sales promotion, market research and product planning with the new title of manager of market planning and promotion.

Onan manufactures a complete line of electric generating plants, separate generators, industrial engines and engine-driven refrigeration compressors.

At a recent meeting of the Board of Directors of **Dorr-Oliver, Inc.,** Stamford, Conn., William L. Oliver was elected Chairman of the Board. Mr. Oliver has been vice-chairman of the Board since 1956 and also serves as general counsel for the corporation. Dorr-Oliver is an engineering and manufacturing firm specializing in filtration, settling, separation and fluidized-bed heat processing equipment for municipal sewerage treatment plants.

CLASSIFIED ADVERTISING

Advertisements in this section will be accepted at the rate of $15 per col. inch (minimum 2 inches). Send copy for ads to the Production Department, THE AMERICAN CITY, 470 Park Ave. South, New York 16, N. Y.

CITY MANAGER WANTED

Village of Marysville, Marysville, Ohio, (5000). Salary open—Budget $300,000.00—New Charter form of government—Council-City Manager—previous experience with training in municipal finance administration and engineering desired. Apply to:

George P. Scheiderer, Clerk.

WATER CHEMIST

Concord, California. Salary open. New position, allows individual to obtain necessary lab equipment and establish procedures to personal specifications. Initiative required. Administrative responsibilities available as supervisor of water treatment facilities. Send resume to Contra Costa County Water District, Pittsburg, California.

WATER ENGINEER

Concord, California. Salary $600-$750. New position of supervisory, design, and planning nature. California registration required, C. E., M. E., or E. E. or equivalent degree. Send resume to Contra Costa County Water District, Pittsburg, California.

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City of Newport News, Virginia. Population 113,000—Area 65 square miles.

Salary range $7,705-$9,290.

Liberal retirement plan. Only qualified engineers will be considered.

Apply to:
Mr. J. C. Biggins, City Manager
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118 Main Street
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Sewage Disposal Plant Operator

We have a brand new sewage disposal plant. It is a primary plant to serve approximately 30,000 people. We need a qualified operator with at least a B-license in the State of Ohio. Remuneration based on your experience and in line with comparable positions. If you are interested in further information in regard to above position contact:

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FOR SALE

Swimming pool filter. Sparkler, Model SCJ, pressure diatomite filter. Capacity 300 GPM. Used only 4 summers. Excellent condition. City now building larger pool and abandoning present pool. Write—J. R. Castner, City Manager, Milton-Freewater, Oregon.

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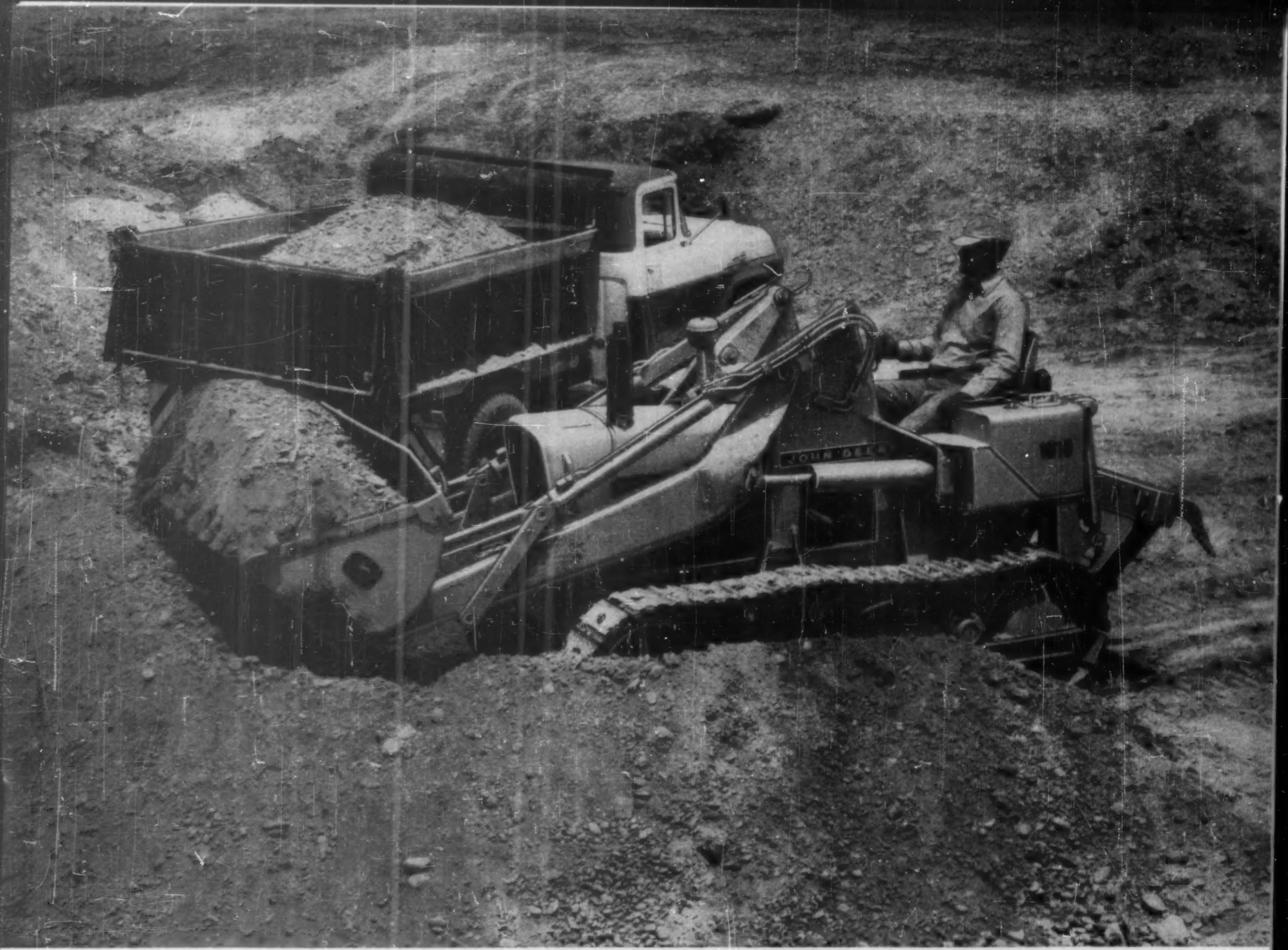

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  - Deodorizers wipe out stench ---- Jan., 37
  - Saves 8-foot sewer—and $ ---- Jan., 96
  - Lighting, space ease parking ---- Apr., 131
  - Window tint cuts sun's heat ---- May, 213
  - Big units do big jobs ---- June, 155
  - Single-family homes ---- July, 108
  - Water supply "eggs" ---- Sept. 210
  - 1959 purchasing sum-up ---- Oct., 181
  - 40 more policemen ---- Dec., 113
- **ATTLEBORO, MASS.**
  - How a nuclear industry and its city cooperate ---- Sept., 108
- **AUBURN, N. Y.**
  - Vinyl chloride lines ---- Jan., 111
- **AUBURN, ME.**
  - Ironing out traffic kinks ---- Apr., 98
- **AURORA, COLO.**
  - MPR sells park plan ---- Mar., 27
  - Teeners prove themselves ---- Dec., 15
- **AURORA, ILL.**
  - Underwrite lie detector ---- Apr., 9
  - Metro sewerage pacts—Part II ---- Nov., 169
- **AUSTIN, TEX.**
  - Uses displays in PR program ---- Apr., 161
  - Fire chief reports a busy year ---- June, 177
- **BAKERSFIELD, CALIF.**
  - For a clean city—keep sweeping ---- June, 30
  - Better sheriff's reports ---- June, 107
- **BALTIMORE COUNTY, MD.**
  - Microfilms show way to fire ---- Sept., 105
- **BAY CITY, MICH.**
  - Wet-blasts water meters ---- Jan., 90
- **BEACONSFIELD, QUEBEC**
  - Low-cost, high-speed digester ---- Apr., 177
- **BELLE GLADE, FLA.**
  - Attacks sewerage problem ---- Mar., 96
- **BELMONT, MASS.**
  - Incinerator gives fly-ash control ---- Jan., 76
- **BERNE, SWITZERLAND**
  - Swiss don't miss incinerator thrift ---- Feb., 32
- **BERKELEY, MO.**
  - Radio serves fire and police ---- Aug., 35
- **BEVERLY HILLS, CALIF.**
  - "Parkettes" + punch cards = 300% revenue gain ---- Mar., 112
  - No more house numbers on the curbs ---- July, 19
- **BIRMINGHAM, ALA.**
  - Paving most people can afford ---- Feb., 114
  - Colored signs identify landfills ---- May, 29
- **BIRMINGHAM, ENGLAND**
  - A red street that stretches ---- July, 11
- **BLOOMINGTON, ILL.**
  - Students urban renewal plan ---- May, 211
- **BLUE ISLAND, ILL.**
  - Bridge to carry heavier traffic ---- Nov., 11
- **BOONVILLE, CALIF.**
  - TV for a mountain-top village ---- Oct., 100
- **BOSTON, MASS.**
  - 16-foot fireboats ---- Jan., 27
  - Incinerator is a steam producer ---- June, 104
  - Public transport—Part II ---- July, 131
  - 1450 cars under Boston's common ---- Aug., 134
  - Already overloaded ---- Sept., 121
- **BOYERTOWN, PA.**
  - Friendship's first aid ---- Sept., 42
- **BRANDON, MANITOBA, CANADA**
  - Chemical handling costs cut 22% ---- Sept., 35
- **BROCKTON, MASS.**
  - Zero $—cost of year's maintenance ---- July, 161
- **BROOKFIELD, ILL.**
  - Teen-age outboard skippers ---- Jan., 9
- **BROOKLAWN, N. J.**
  - Glazing ends breakage problem ---- Jan., 24
- **BURBANK, CALIF.**
  - Modern files permit more efficient government ---- Aug., 101
- **BURLINGTON, N. C.**
  - Intensive fire training ---- Feb., 28
- **BRUNDIDGE, ALA.**
  - Small city convinces its public ---- Sept., 40
- **CAEN, FRANCE**
  - Water tower and market combined ---- May, 169
- **CALIFORNIA**
  - Cleans up auto exhaust ---- June, 150
  - Over $12 billion for street improvements ---- Nov., 11
- **CARTAGENA, COLOMBIA**
  - Sewer system changes traffic pattern Feb., 43
- **CAYCE, S. C.**
  - Lighting policy ---- Dec., 118
- **CHAGRIN FALLS, OHIO**
  - Planning helped save downtown ---- Dec., 91
- **CHARLESTON, S. C.**
  - Guards its historic structures ---- June, 120
- **CHARLOTTE, N. C.**
  - 600 miles of stripes ---- July, 134
  - Adopts master highway plan ---- Aug., 102
  - Ideas for government checklist ---- Nov., 152
- **CHATTANOOGA, TENN.**
  - Saving man-hours and dollars ---- Apr., 167
- **CHEVIOT HILLS, CALIF.**
  - Benefit from county ordinance ---- Oct., 131
- **CHICAGO, ILL.**
  - Aerial platform—new fire fighter ---- Jan., 83
  - Fire main heated electrically ---- Feb., 91
  - Calumet incinerator ---- Feb., 96
  - On State Street ---- Mar., 39
  - Chicago's top year for waterworks construction ---- May, 30
  - A fresh idea in sewage disposal ---- May, 99
  - Public transport—Part I ---- June, 125
  - Designing a small city park ---- June, 173
  - 144-foot ladders ---- Sept., 48
  - Transit cars and automobiles ---- Sept., 181
  - Chicago's city foresters ---- Nov., 103
  - Doing his worst ---- Nov., 145
  - Metro sewerage pacts—Part II ---- Nov., 169
  - Salting Chicago's transit ---- Dec., 20
- **CINCINNATI, OHIO**
  - Spreader is converted packer ---- Feb., 26
  - PR formula for city operations ---- Mar., 162
  - Better prices through aggressive purchasing ---- July, 136
  - Police role in city planning ---- Aug., 97
- **CLARINDA, IOWA**
  - Demanded a water-rate increase ---- Oct., 16
- **CLAYTON, MO.**
  - We know where we're going ---- Oct., 161
- **CLEVELAND, OHIO**
  - Brighter home for Cleveland teams ---- Feb., 147
  - A tough floor for a rough job ---- Mar., 36
  - Air pollution information center ---- Apr., 41
  - Precast, prestressed park bridges ---- May, 43
  - Public transport—Part III ---- Aug., 141
- **COALINGA, CALIF.**
  - We use an undrinkable water ---- July, 114
- **COBB COUNTY, GA.**
  - Water authority—with a difference ---- Sept., 197
- **COLORADO SPRINGS, COLO.**
  - You have to plan fast ---- Aug., 107
- **COLUMBIA, S. C.**
  - Annual report is 1960 calendar ---- July, 116
  - Columbia honors manager ---- Nov., 18
- **COLUMBUS, IND.**
  - Columbusites love to ice skate ---- Feb., 107
- **COLUMBUS, OHIO**
  - Ambulance-cruisers ---- Sept., 127
  - School traffic accidents are out ---- Sept., 149
- **CONNECTICUT**
  - Even floods have hidden benefits ---- Feb., 175
  - Fringe employment benefits ---- Apr., 116
- **COOK COUNTY, ILL.**
  - How Cook County stores checks ---- Nov., 102
- **CORTLAND, N. Y.**
  - Gas will take over ---- Sept., 35
- **COSTA MESA, CALIF.**
  - No more "coffee can" meter-pit pumping ---- July, 27
- **COUNCIL BLUFFS, IOWA**
  - Finances refuse sanitation ---- Sept., 37
  - Plows start with 4 inches of snow ---- Oct., 25
  - Checkerboard street cleaning ---- Dec., 20
- **COVINA, CALIF.**
  - Capital-improvements program ---- May, 104
  - Tax rise antidote ---- June, 179
  - Administration must show results ---- Sept., 124
- **CRISFIELD, MD.**
  - Midget police vehicle ---- Jan., 27
- **CYPRESS, CALIF.**
  - One police dept. for two cities ---- Feb., 154
- **DADE COUNTY, FLA.**
  - VHF, microwave CD network ---- Sept., 42
- **DAIRYLAND, CALIF.**
  - One police dept. for two cities ---- Feb., 155
- **DALY CITY, CALIF.**
  - One reservoir inside the other ---- Oct., 115
- **DALLAS TEX.**
  - Catalog data essential ---- Dec., 139
- **DANVILLE, KY.**
  - Pipe examined after 24 years ---- June, 25
- **DARIEN, CONN.**
  - Developing the center of a suburb ---- Nov., 126
- **DAYTON, OHIO**
  - Carbide-tip teeth prove best ---- Aug., 189
  - Rotation tree pruning ---- Oct., 103
  - Handy for painting band shells ---- Nov., 37
  - Dredge speeds sludge recovery ---- Nov., 118
  - Traffic gets attention ---- Nov., 142
- **DEARBORN, MICH.**
  - $50 reward for litterbugs ---- Feb., 46
- **DECATUR, ILL.**
  - Cleaner streets this year ---- Aug., 39
  - Attacking bad accident record ---- Oct., 123
  - Keeps lighting standards high ---- Dec., 118
- **DENVER, COLO.**
  - Plastic wall extends swimming pool season ---- Feb., 13
  - Asphalt curb pays off in parks ---- Apr., 26
  - Punched tape helps lift work load ---- Oct., 157
- **DES MOINES, IOWA**
  - A snow and ice program that works Aug., 115
- **DETROIT, MICH.**
  - Service without an authority ---- Mar., 114
  - Studies firehouse locations ---- Sept., 207
- **DISTRICT OF COLUMBIA**
  - Small purchase procedure ---- Feb., 152
  - Tries radio traffic signals ---- Apr., 126
  - New Potomac crossings ---- Sept., 150
- **DOTHAN, ALA.**
  - Traffic circle around small city ---- Apr., 151
  - Refuse containers pay dividends ---- May, 102
- **DOUGLAS COUNTY, WASH.**
  - Low-cost public project forms ---- May, 122
- **DUBLIN, GA.**
  - From meter to ledger by radio ---- Nov., 112
- **DULUTH, MINN.**
  - Lights on Duluth's ship canal ---- Oct. 137
- **EDINA, MINN.**
  - The family swim plan ---- Aug., 9
  - Concrete streets win preference ---- Sept., 11
  - Liquor store helps village ---- Sept., 205
  - Double the voting machines ---- Oct., 149
  - No hand-labor needed ---- Nov., 35
- **EL CAJON, CALIF.**
  - 1,250-gpm for El Cajon ---- July, 31
- **ELIZABETHTOWN, KY.**
  - Two plants at one location ---- Sept., 122
- **ELMIRA, N. Y.**
  - Cleaner air—without penalties ---- Mar., 109
- **EL PASO, TEX.**
  - Cleaner streets in El Paso ---- Jan., 141
  - Sweeper handles "blow sand" ---- Nov., 161
- **ELYRIA, OHIO**
  - Standby performs double duty ---- Feb., 159
- **ENFIELD, CONN.**
  - Good street lighting ---- Dec., 114
- **ENGLEWOOD, COLO.**
  - Relighting in five annual steps ---- Jan., 119
  - Traffic truck for a small city ---- Mar., 129
- **ENGLEWOOD, N. J.**
  - You can plant trees downtown ---- Sept., 219
- **ESTES PARK, COLO.**
  - Good water for vacationers ---- Mar., 102
- **EUGENE, ORE.**
  - Mercuries replace ornamentals ---- May, 133
- **EVANSVILLE, IND.**
  - Evansville joins ---- Apr., 41
- **EVANSTON, ILL.**
  - Twelve years with parking ---- Feb., 135
  - Fire-police cooperation ---- Sept., 174
- **EVERETT, WASH.**
  - Short-cut to better alleys ---- Apr., 106
- **FAIR LAWN, N. J.**
  - What makes a good industrial park ---- May, 240
  - Right-hand-drive compacts ---- July, 131
- **FAIRMONT, MINN.**
  - Rates down . . . production up ---- Sept., 111
- **FARGO, N. D.**
  - Four footcandles on Broadway ---- Aug., 127
- **FARMVILLE, VA.**
  - Size no deterrent to good refuse disposal ---- Apr., 47
- **FAIRBAULT, MINN.**
  - Modern lighting by remodeling ---- Jan., 115
- **FENTON, MICH.**
  - Bridge replacement satisfies and saves May, 11
- **FERGUSON, MO.**
  - More light from a utility contract ---- June, 140
- **FLORIDA**
  - Sewage plant awards presented ---- Aug., 104
  - Recognizes best operated plants ---- Sept., 35
  - More public waterfront needed ---- Sept., 99
- **FOREST PARK, ILL.**
  - Ice-skating rink earns its way ---- Apr., 26
- **FORT LAUDERDALE, FLA.**
  - A mechanical seaweed rake ---- July, 109
- **FORT PIERCE, FLA.**
  - Readies for 1985 traffic ---- Nov., 145
  - $130 to $300 to install mercury unit Dec., 118
- **FORT WORTH, TEX.**
  - Pipe change lowers costs ---- July, 15
  - Freeway breaks the rules ---- Sept., 145
- **FRANKLIN PARK, ILL.**
  - Good in a business district ---- May, 133
- **FRASER, MICH.**
  - Has natural fluoridation ---- July, 171
- **FREDERICKSBURG, VA.**
  - Paper bags for speedy garbage collection ---- June, 33
- **FREMONT, CALIF.**
  - Coordinates recreation and saves ---- Jan., 98
- **FREEPORT, TEX.**
  - Site for experimental water plant ---- Oct., 16
- **FREMONT, OHIO**
  - Coagulant choice ---- Aug., 161
- **FRESNO, CALIF.**
  - Save through equipment management Aug., 112
  - Paints a new central picture ---- Oct., 177
  - Pigeons can be controlled ---- Nov., 183

GAINESVILLE, GA.
- Uniform house numbering ---- Aug., 97
- How we extend water mains ---- Sept., 225

GALVESTON, TEX.
- Abandons commission form ---- July, 32

GATLINBURG, TENN.
- Gateway cities beckon to the Smokies Apr., 129

GENESEO, ILL.
- Automatic-controlled gas diesel ---- July, 97

GENEVA, N. Y.
- Water pressure drop was problem ---- May, 181

GERMANY
- U. S.-German cities compared ---- Nov., 116

GLENDALE, CALIF.
- Park maintenance dollars ---- June, 111
- Planning can produce money-saving park programs ---- Sept. 127
- A package-deal refuse program ---- Dec., 88

GOLDEN VALLEY, MINN.
- Sewers bring industry ---- May, 203

GRAND ISLAND, NEB.
- Planning and organization make up for lack of equipment ---- Jan., 23

GREAT FALLS, MONT.
- Bridge walk replaced with prefabricated slabs ---- Mar., 11

GREENCASTLE, IND.
- Water works are flood resistant ---- Apr., 100

GREENWICH, CONN.
- Photocopies valuable ---- Jan., 81

GRIFFIN, GA.
- Purchasing procedures ---- Mar., 183

HANNIBAL, MO.
- Mark Twain would remember this pipeline ---- Mar., 15

HARTFORD, CONN.
- $35 million renewal program ---- May, 23

HAWAII
- Hawaii—the state without a city ---- Jan., 121

HELIX, ORE.
- A cooperative refuse program ---- July, 94

HEMPSTEAD, LONG ISLAND, N. Y.
- Horizontal street names better ---- Aug., 149

HENDERSON, KY.
- Safety first in gas distribution ---- July, 106

HIGHLAND PARK, ILL.
- Melt resistant ice rinks ---- Apr., 149
- Landfill is a money maker ---- Oct., 23

HILLSIDE, N. J.
- How's your speedometer? ---- Aug., 137
- Save your license ---- Nov., 146

HOLLISTER, CALIF.
- Step by step in Hollister ---- Sept., 137

HOMESTEAD, FLA.
- Acts to keep city power plant ---- Sept., 176

HOLLYWOOD, FLA.
- Phone pays city $90 a year ---- Apr., 44
- TV camera detects sewer leaks ---- Aug., 40
- Downtown beautification ---- Dec., 98

HONOLULU, HAWAII
- Parking meters in Waikiki ---- Sept., 147
- The Honolulu fire department ---- Nov., 129

HOUSTON, TEX.
- Starlight stairway ---- Dec., 137

HYATTSVILLE, MD.
- No peak-day worries ---- Oct., 93

ILLINOIS
- Along the Illinois tollway ---- Jan., 112
- Illinois approves plastic pipe ---- Apr., 162

INDIANAPOLIS, IND.
- Some practical ideas ---- May, 109
- Water-main extension charges ---- June, 89

IOWA CITY, IOWA
- Citizenry informed about refuse collection ---- Apr., 47
- A municipal tree census ---- July, 85

JACKSON, TENN.
- Sponsored sanitation program ---- Apr., 168

JACKSONVILLE, ILL.
- "Skip parking" in Jacksonville ---- July, 129

JAMESTOWN, N. Y.
- Snow and ice control ---- Dec., 71

JEFFERSON COUNTY, ALA.
- Outwits manhole-lid thefts ---- Nov., 29

KALAMAZOO, MICH.
- Shopping malls prove to be good ---- May, 243
- Merchants pay for big relighting ---- June, 133
- Merchant views on shopping mall ---- Dec., 95

KEOSAUQUA, IOWA
- Small towns can afford planning ---- May, 120

KERRVILLE, TEX.
- Mercuries and incandescents ---- Nov., 139

LAKE FOREST, ILL.
- Data processing ---- Sept., 179

LAKELAND, FLA.
- Uses new degritter ---- Feb., 110
- The same service at less cost ---- Aug., 98

LaGRANGE, ILL.
- Firemen fill out park personnel ---- June, 41

LAKEWOOD, CALIF.
- Lakewood produces community film Apr., 199

LAKE WORTH, FLA.
- Don't say "water shortage" here ---- Apr., 110

LANSING, MICH.
- For a better mall ---- Oct., 204

LARCHMONT, N. Y.
- More than a parking lot ---- May, 153

LAS VEGAS, NEV.
- Traffic engineering in Las Vegas ---- Feb., 137
- The city of bright futures ---- Dec., 120

LEWISTON, MAINE
- Ironing out traffic kinks ---- Apr., 98

LIBERTY, TEX.
- New engines slash fuel costs ---- May, 116

LINCOLN, NEB.
- Holes patched to last ---- July, 92

LITTLE ROCK, ARK.
- Plastic pipe solves a problem ---- Aug., 27
- Little Rock seen in a new light ---- Sept., 135

LIVONIA, MICH.
- Our multi-use equipment pays ---- Jan., 33

LOCKPORT, LA.
- A sewerage system below sea level ---- Oct., 190

LOMPOC, CALIF.
- A new sewage plant for Lompoc ---- Nov., 96

LONG BEACH, CALIF.
- Fireman originates fire hydrant device Feb., 28
- We use a hay-rake ---- Mar., 188
- Largest dry-seal gas holder ---- Aug., 100
- Smoother two-way broadcasting ---- Nov., 141

LOS ANGELES, CALIF.
- Public judges litter receptacles ---- Mar., 33
- Helicopter—latest police tool ---- Apr., 123
- Parapets are "bombs" ---- May, 98
- Let's have smaller cars—and why? ---- May, 145
- Proves pipe-coating durability ---- June, 112
- Visible records handle traffic violations ---- June, 130
- Installing lights and signals ---- July, 118
- Latest anti-litter idea ---- Aug., 31
- L.A.'s police helicopter ---- Aug., 169
- Los Angeles to test purified sewage as water source ---- Oct., 21
- Chain saws fight harbor fire ---- Nov., 27
- California's "contract cities" ---- Dec., 100
- Moving cars fast ---- Dec., 109

LOUISVILLE, KY.
- Select police automobiles for the exact service ---- Apr., 164
- Merchants praise 40,000-lumen lighting ---- May, 131
- 25,000-lumen mercuries for Louisville's residential areas ---- July, 126
- New fire alarm ---- Sept., 42

LOUP CITY, NEB.
- Small city saves on resurfacing ---- Jan., 11

LOWER PENNS-NECK TOWNSHIP, N. J.
- One machine—many jobs ---- Sept., 37

McPHERSON, KAN.
- Why go to the moon? ---- Feb., 139

MACOMB COUNTY, MICH.
- Provide drainage before floods occur Feb., 118

MACON, GA.
- Poplar Street, yardstick of revival ---- Aug., 150

MADISON, WIS.
- A long-range look at light ---- May, 135
- Plans capital improvements ---- Aug., 110

MAMARONECK, N. Y.
- No utopia in street lighting ---- July, 124

MAPLE SHADE, N. J.
- A railroad crossing made us start planning ---- June, 169

MARINETTE, WIS.
- Why we do our own paving ---- Mar., 106
- Mercury vapor extensions ---- Sept., 141

MARSHVILLE, N. C.
- Voluntary contributions complete water-works financing ---- Feb., 25

MARTINSVILLE, VA.
- Electric system not for sale ---- Aug., 104

MASSAPEQUA PARK, N. Y.
- Double-duty sweepers ---- Apr., 113

McALESTER, OKLA.
- We do better with our own plant Nov., 104

MELBOURNE, FLA.
- We're ready to serve our suburbs ---- Feb., 104

MERCED, CALIF.
- Merced decides on mercuries ---- July, 124

MIAMI BEACH, FLA.
- Mile-long pedestrian mall ---- Nov., 45

MIAMI, FLA.
- City employees learn safe driving ---- Jan., 80
- Lighting equipment for hurricanes ---- Jan., 115
- Sleep in the midst of take-offs ---- Feb., 120
- Lime recovery pays in Miami ---- May, 93
- Dial any Miami city-county office ---- July, 155
- More than just a garbage burner ---- Sept., 102
- Uniforms make meter reading safer ---- Oct., 16
- Downtown plan a traffic strainer? ---- Oct., 118
- Free parking in the bag ---- Dec., 113

MIDDLEBUSH, N. J.
- Councilman builds council table ---- July, 176

MILTON, VT.
- Ingenuity solves a water problem ---- Apr., 34

MILWAUKEE, WIS.
- Sewer built to withstand heavy loads Jan., 87
- A report on central stores ---- Jan., 159
- Hydraulic crane to handle gorillas ---- Feb., 13
- Only one answer: incineration ---- Apr., 94
- New dryers speed milorganite production ---- June, 93
- Vapor-blasts water meters ---- July, 88
- Milwaukee purchasing ---- Aug., 147
- Ions purify bid openings ---- Sept., 31
- A valve for Brasilia ---- Dec., 25

MINEOLA, N. Y.
- Ground-level water storage ---- May, 223

MINNEAPOLIS, MINN.
- Bituminous pavement maintenance ---- Jan., 88

MONROE COUNTY, PA.
- Keep reassessment up to date ---- Dec., 83

MONROE, LA.
- 20-year sewer at 1/3 the cost ---- July, 90

MONROVIA, CALIF.
- Monrovia provides free parking ---- July, 134

MONTEBELLO, CALIF.
- Better license enforcement with central records ---- July, 103

MONTGOMERY, ALA.
- Good records mean better control ---- Oct., 100

MORRISTOWN, N. J.
- Water-works' automatic control saves three ways ---- Aug., 118

MOUNT HOLLY, N. J.
- Good shade trees for bad ---- Sept., 9
- Five days, 75,000 square yards ---- Oct., 11
- Colonial architecture pushed ---- Oct., 98
- Landfill restores war site ---- Nov., 30
- Salt alone cleans streets ---- Nov., 35

MT. PROSPECT, ILL.
- All utility charges on one bill ---- Apr., 174

MUSKEGON HEIGHTS, MICH.
- A three-way traffic ticket ---- Apr., 125

NAPA, CALIF.
- Planes away bumps—and saves ---- Apr., 11

NAPLES, FLA.
- Cleaner streets at low cost ---- July, 165

NASHVILLE, TENN.
- More cars and lights—fewer deaths ---- July, 104
- Nashville's PTA crossing patrols ---- Oct., 123

NEEDHAM, MASS.
- Plastic sewer main a U. S. first ---- Mar., 47

NEOSHO, MO.
- Water and sewerage school ---- Sept., 97

NEWBURGH, N. Y.
- Returns to sanitary landfill ---- Sept., 187
- From criticism to compliments in two years ---- Nov., 94

NEWPORT BEACH, CALIF.
- We modified a rock picker ---- Apr., 115

NEWARK, N. J.
- Gets underground parking garage ---- Feb., 137

NEW ALBANY, IND.
- A refuse-sewage treatment works ---- Aug., 89

NEW JERSEY
- Makes regional renewal study ---- Mar., 151

NEW ORLEANS, LA.
- Stripes in four weeks ---- Dec., 111

NEW YORK
- New booking system applicable to city libraries ---- Apr., 96
- Big police radio service contract ---- July, 167
- Spotlights middle-income housing ---- Oct., 98

NEW ROCHELLE, N. Y.
- The uncalculated cost of sludge disposal ---- Apr., 23

NEW YORK, N. Y.
- Armament against "old man winter" Jan., 23
- 1,000 city paychecks a minute ---- Jan., 82
- Walk-Don't Walk signs are talking ---- Jan., 107
- School of sewerage safety ---- Jan., 69
- Ten curb miles a day in crowded traffic ---- Feb., 46
- Safety and economy of one-waying Mar., 135
- Bronx Zoo toll gates ---- Mar., 135
- Ice wall protects shaft excavation ---- Apr., 90
- Code of ethics for employees ---- Apr., 138
- Where policewomen are better than men ---- Apr., 161
- Plastic alarm globes ---- Apr., 137
- Aqueduct race track, big water user May, 229
- Public transport, Part I ---- June, 125
- Parking meter nurses ---- July, 132
- New York lights against crime ---- Aug., 125
- Meter maids now at work ---- Aug., 143
- This, too, is sanitation ---- Aug., 175
- Street-cleaning practice ---- Sept., 22
- Aerial survey—key to watershed pollution study ---- Sept., 182
- Queensboro Bridge carries more than traffic ---- Oct., 155

NIAGARA FALLS, N. Y.
- Self-financing street program ---- Sept., 167

NILES, MICH.
- Keeping 'em ticking on streets ---- Oct., 127

NORTH CAROLINA
- Annexation laws aid cities ---- May, 24

NORTH DAKOTA
- Soil-cement streets are good ---- Apr., 92
- Sewage purification lagoons ---- July, 15

NORWALK, CALIF.
- We sweep our own streets ---- Aug., 105

NORWALK, CONN.
- Punches push Norwalk up to date ---- Feb., 102

NYSSA, ORE.
- Placing STOPS to get attention ---- Sept., 149

OAK PARK, ILL.
- We use a bus for ice control ---- Sept., 22

OCALA, FLA.
- Labor-saving pump trailer ---- Feb., 25
- Surveys help rouse public interest ---- Sept., 190
- Busy earthmoving equipment ---- Dec., 101

OGDEN, UTAH
- Ogden starts park program ---- Oct., 9

OHIO
- Regional planning booms in Ohio ---- June, 172

OKLAHOMA CITY, OKLA.
- Municipal hangar for jet transports Aug., 102
- It transports or patrols ---- Nov., 27

OKLAHOMA
- Studies refuse practices ---- Jan., 37

ONTARIO, CANADA
- Bright Burlington Bay skyway ---- Sept., 143

ORANGE COUNTY, CALIF.
- Imported water ---- Apr., 117
- Urban County adopts master plan ---- May, 29
- Mobile air sampler ---- June, 91
- Holes—remedy for a big headache ---- July, 147
- Planning board tapes meetings ---- Oct., 114

OREGON
- Lighting at Oregon centennial ---- Mar., 145

ORLANDO, FLA.
- City-employee cafeteria ---- June, 100

OSAGE, IOWA
- Lights draw in farm population ---- Feb., 140

OSHKOSH, WIS.
- Snow-fighting plan is essential ---- Feb., 116
- Parking garage for Oshkosh ---- June, 130
- No more algae problems ---- Oct., 185

OTTAWA, ILL.
- Photographic pavement inspection ---- Nov., 99
- Traffic signals synchronized ---- Feb., 131

PACIFIC GROVE, CALIF.
- Road-mixes and stores topping ---- May, 114

PALATINE, ILL.
- Shoppers' parking lot ---- June, 129

PALM SPRINGS, CALIF.
- Sparkling in the desert sun ---- Mar., 105

PANAMA CITY, FLA.
- A marina civic center ---- Nov., 37

PARAMOUNT, CALIF.
- Relights for better business ---- Feb., 147

PARSONS, KAN.
- Base-bid specifications ---- Aug., 92

PARMA, OHIO
- Small flowering trees wanted ---- Jan., 151

PASADENA, CALIF.
- Street lights fit each area ---- Oct., 116

PAWTUCKET, R. I.
- Roof for Pawtucket's reservoir ---- June, 99

PELLA, IOWA
- Built-to-order water plant ---- June, 161

PENNSYLVANIA
- Radar traffic count tests ---- Sept., 128

PEORIA, ILL.
- Can't pass up urban renewal ---- Feb., 37

PETERBOROUGH, CANADA
- 2-lift road-mix surfacing ---- Mar., 93

PEWAUKEE, WIS.
- Multi-purpose tractor chops cost ---- Jan., 94

PHILADELPHIA, PA.
- Cheap fast transit ---- Jan., 130
- Expressway lighting ---- Mar., 143
- Dogs on park patrol ---- Apr., 9
- Circular police building ---- Apr., 112
- Motorized sewer inspection ---- May, 36
- Improving commuter rail service ---- May, 129
- Public transport—Part II ---- July, 131
- Half-trac fire fighter ---- Sept., 48
- Tests asbestos asphalt ---- Oct., 11
- New trash-baskets ---- Oct., 25
- An atmosphere of automation ---- Oct., 106
- Dynamic municipal leaders ---- Oct., 171
- One police station for two ---- Nov., 27
- Buys a fleet of subway trains ---- Nov., 107
- A flow of money-saving ideas ---- Dec., 77

PHILIPSBURG, PA.
- Sweeper to pay its way ---- Oct., 95
- Leaf collection for 70% less ---- Nov., 35
- Likes its compacts ---- Dec., 111

PHOENIX, ARIZ.
- Asks bids for composting refuse ---- Mar., 161
- Trains city administrators ---- May, 41
- Street sanitation that pays ---- May, 195
- Hydraulic loader triples refuse collection ---- July, 39
- Phoenix looks into composting ---- Aug., 31
- Awards composting contract ---- Oct., 159
- Lighting an exploding city ---- Nov., 135
- Airport goes jet ---- Dec., 82

PITTSBURGH, PA.
- Pittsburgh's underground garage ---- Apr., 126
- City salaries in Pittsburgh area ---- May, 122
- Honored as City of the Decade ---- Oct., 169
- Likes its compacts ---- Dec., 111

PITTSBURG, CALIF.
- How parking is done in Pittsburg ---- Oct., 120

PIQUA, OHIO
- Atom plant another first ---- June, 113

POLK COUNTY, FLA.
- Lake rescues in Polk County ---- May, 33

PONTIAC, MICH.
- Fluorescents are appreciated ---- Mar., 139

PORT HURON, MICH.
- Lights streets to fit traffic ---- Nov., 137

PORTLAND, ORE.
- New Coliseum ---- Mar., 111
- Keeps streets clean mechanically ---- Sept., 100

PRINCETON, N. J.
- Slurry seal on trial ---- Feb., 8

RACINE, WIS.
- Tests snow program and equipment Jan., 74

RALEIGH, N. C.
- Studies its business district ---- Apr., 41

RAPID CITY, S. D.
- Storybook Island ---- Mar., 122
- 75% more parking on streets ---- Dec., 80

READING, PA.
- How Readingites go to work ---- Feb., 133

RICHMOND, VA.
- Wooden water mains ---- Apr., 89
- Richmond's fire activities ---- Sept., 106
- Safety first at Richmond airport ---- Nov., 114
- Boosts police "dogpower" ---- Nov., 196

RIDGEFIELD, N. J.
- Police install new transistor radios ---- Dec., 33

RIVERSIDE, CALIF.
- Program upgrades refuse service ---- Apr., 108

ROANOKE, VA.
- Billboards tell tax story ---- Mar., 120

ROBBINSDALE, MINN.
- We put a man in a bucket ---- June, 41

ROCHESTER, MINN.
- How IBM came to Rochester ---- Nov., 100

ROCHESTER, N. Y.
- Inexpensive playground equipment ---- Feb., 99
- Overtime parking collected on the spot ---- June, 165
- Best in class—third in nation ---- June, 167
- Driver training instead of fines ---- June, 175
- The Rochester Fire Bureau ---- Sept., 159

ROCK ISLAND, ILL.
- First year for salaried magistrate ---- Sept., 181
- Automatic toll collectors ---- Oct., 201

ROCKVILLE, CONN.
- Wins street lighting award ---- Oct., 153

ROCKVILLE, MD.
- Center and lighted lots ---- May, 135

ROSEBURG, ORE.
- Fire and explosion in Roseburg ---- May, 237

ROSEVILLE, CALIF.
- Roseville's citywide relighting ---- Nov., 133

RUMFORD, ME.
- Rumford's five-year plan ---- May, 136

RYE, N. Y.
- Something different in incinerator design ---- Nov., 108

SAGINAW, MICH.
- Telescribers control records ---- Apr., 97
- Skate in the center of town ---- July, 29
- Only three people needed ---- Aug., 15
- Salt for safety in Saginaw ---- Aug., 29

SALEM, ILL.
- How we control our subdivisions ---- July, 169

SANBORN, IOWA
- Traffic signal guards children ---- Mar., 133

ST. ALBANS, VT.
- Off-street parking ---- Feb., 127

ST. LOUIS, MO.
- No barricades are needed ---- Nov., 29

ST. LOUIS PARK, MINN.
- Water, sewer mains influence street paving design and programming ---- May, 97

ST. PETERSBURG, FLA.
- Reflectorizes all runways ---- Oct., 104

SAN ANTONIO, TEX.
- People live longer today ---- Jan., 99
- Year of fire improvement ---- July, 98
- Better gravel streets ---- Aug., 95

SAN FERNANDO, CALIF.
- Field-tested lubrication program ---- July, 149

SAN FRANCISCO, CALIF.
- Studies finances of transit system development ---- Jan., 139
- Status of Bay Area transit system ---- Apr., 167
- Simple record of motor boats ---- Sept., 117

SAN JOSE, CALIF.
- City hall symbolizes new era ---- Apr., 87
- Lights for 100 new residents a day ---- Aug., 129

SAN JUAN, PUERTO RICO
- San Juan's choice ---- July, 110

SAN RAFAEL, CALIF.
- Eight footcandles downtown ---- Mar., 137

SANTA BARBARA, CALIF.
- Santa Barbara's police building ---- Aug., 106

SANTA CRUZ, CALIF.
- Meet Joe Benito, man with a record Mar., 33
- Weed burning pays ---- July, 147

SASKATOON, SASKATCHEWAN, CAN.
- All factors favored tunnelling ---- June, 36

SAVANNAH, GA.
- Fast action in lagoons ---- July, 112

SCHENECTADY, N. Y.
- Snow removal is expensive ---- Feb., 26

SEATTLE, WASH.
- Accounts by data processing ---- Mar., 99
- Accounting at Seattle City Light ---- June, 145

SEVIERVILLE, TENN.
- Cities beckon to the Smokies ---- Apr., 129

SHEBOYGAN, WIS.
- "Water is free' ---- June, 108

SHELBY, N. C.
- Double water for growth ---- Dec., 74

SHOREWOOD HILLS, WIS.
- Sixth year with garbage grinders ---- Apr., 162

SIOUX CITY, IOWA
- Sioux City tackles pollution ---- Nov., 120

SOMERVILLE, MASS.
- Somerville builds an incinerator ---- May, 219

SOUTH BEND, IND.
- Cost accounting benefits airport ---- May, 213

SPOKANE, WIS.
- Motorcycles in Spokane ---- Feb., 28

SPRINGFIELD, ILL.
- Disk harrow reworks road surface ---- Jan., 11
- Successful traffic signaling ---- Jan., 103
- How Springfield was "de-starlingized" ---- June, 195

SPRINGFIELD, MASS.
- Largest prestressed tanks ---- Nov., 38

SPRINGFIELD, MO.
- Emergency plan saves the day ---- Oct., 90

SPRINGFIELD, TENN.
- Ready for the next 20 years ---- Oct., 112

STOCKHOLM, SWEDEN
- Traffic signals for the blind ---- Apr., 167

STRATFORD, OKLA.
- Small-town refuse handling ---- June, 96

SUMTER, S. C.
- One man's dream—a city's Eden ---- May, 118

SUNNYVALE, CALIF.
- Ten years of Sunnyvale's combined police and fire ---- Apr., 188

SUPERIOR, NEB.
- Mayor Hanna's record ---- Feb., 35
- We're proud of our river ---- Feb., 89

SYRACUSE, N. Y.
- Traffic considered with street construction work ---- Apr., 11

TACOMA, WASH.
- Automatic controls lower costs ---- Jan., 72
- Safety for municipal employees ---- Nov., 30

TAKOMA PARK, MD.
- Better facilities—better work ---- Aug., 171

TEMPLE, TEX.
- Surface treatment doesn't always do Aug., 11
- No insect pests in Temple ---- Sept., 110
- A do-it-yourself wash rack ---- Nov., 117

TENNESSEE
- Current bids in Tennessee cities ---- Mar., 183

THREE RIVERS, MICH.
- Measures against JD ---- Apr., 153
- Three Rivers reports on traffic ---- July, 129

TOKYO, JAPAN
- Transit battling population ---- Aug., 108

TOLEDO, OHIO
- Shopping malls prove to be good ---- May, 243
- Machines oust ponies in zoo ---- Aug., 9

TRAVERSE CITY, MICH.
- Grandview no longer a "tunnel" ---- Nov., 139

TRENTON, MICH.
- Play slide offers kiddy challenge ---- Mar., 27

TROY, OHIO
- Machine-power sewer cleaning ---- Sept., 40

TUCSON, ARIZ.
- Tests drunken drivers ---- Feb., 23

TULIA, TEX.
- Two diesels shoulder power load ---- Jan., 92

TWO RIVERS, WIS.
- Relights on a massive scale ---- Oct., 129

TYLER, TEX.
- Giant aluminum Christmas tree. ---- Oct., 9

UDALL, KAN.
- Tornado makes Udall safest city ---- Oct., 192

UVALDE, TEX.
- Reviews all service charges ---- Sept., 153
- New refuse trucks reduce costs ---- Nov., 30

VALDOSTA, GA.
- Valdosta containerizes ---- Mar., 94
- They earn their cost twice over ---- Aug., 109

VINCENNES, IND.
- A cleaner Wabash River ---- Dec., 96

WACO, TEX.
- Better policing of Waco, Tex. ---- May, 33

WACONIA, MINN.
- New pumping engine ---- Mar., 29

WALTHAM, MASS.
- Waltham's fire activities ---- Oct., 27

WANAKAH, N. Y.
- Twice the plant for half the money ---- Mar., 89

WASHINGTON
- New Olympia freeway ---- Feb., 142
- Share state-collected revenues ---- Nov., 106

WATERBURY, CONN.
- Plans its future ---- Jan., 155

WATERFORD, N. Y.
- First zeta potential water plant ---- Sept., 114

WAUKESHA, WIS.
- The right type of reservoir ---- Nov., 91

WAXAHACHIE, TEX.
- Surface supply plus water security ---- Mar., 155

WAYNE COUNTY, MICH.
- Provide drainage before floods ---- Feb., 118

WEST ALLIS, WIS.
- No sand-lot baseball ---- Sept., 9

WEST COVINA, CALIF.
- Fourteen bridges in two years ---- June, 94

WEST PALM BEACH, FLA.
- Map mistaken for abstract art ---- Sept., 33

WESTERN SPRINGS, ILL.
- Water tower symbolizes local gov't. May, 30

WESTMINSTER, COLO.
- Joint city-school pool ---- Dec., 87

WESTON, ORE.
- A cooperative refuse program ---- July, 94

WESTON-SUPER-MARE, ENGLAND
- Area in pump-station design ---- Oct., 21

WHEELING, WEST VA.
- Wet oxidation in sludge disposal ---- May, 99

WHITE PLAINS, N. Y.
- Street lights to cut crime ---- June, 140
- A new incinerator was best ---- Aug., 183

WHITESIDE COUNTY, ILL.
- Saving 122-year-old records ---- Nov., 111

WICHITA, KAN.
- Grease from garbage grinders not significant ---- May, 36
- Water-works in transition ---- July, 100
- Trailer parks good neighbors ---- Nov., 148

WILKINSBURG, PA.
- Planned street lighting ---- Apr., 132

WILLIMANTIC, CONN.
- More of the same ---- Dec., 85

WINNIPEG, MANITOBA, CANADA
- How Metropolitan Winnipeg will function ---- Sept., 120
- Lighting streets and holidays ---- Oct., 133

WOODSFIELD, OHIO
- From one engine's savings — buy another ---- Feb., 112

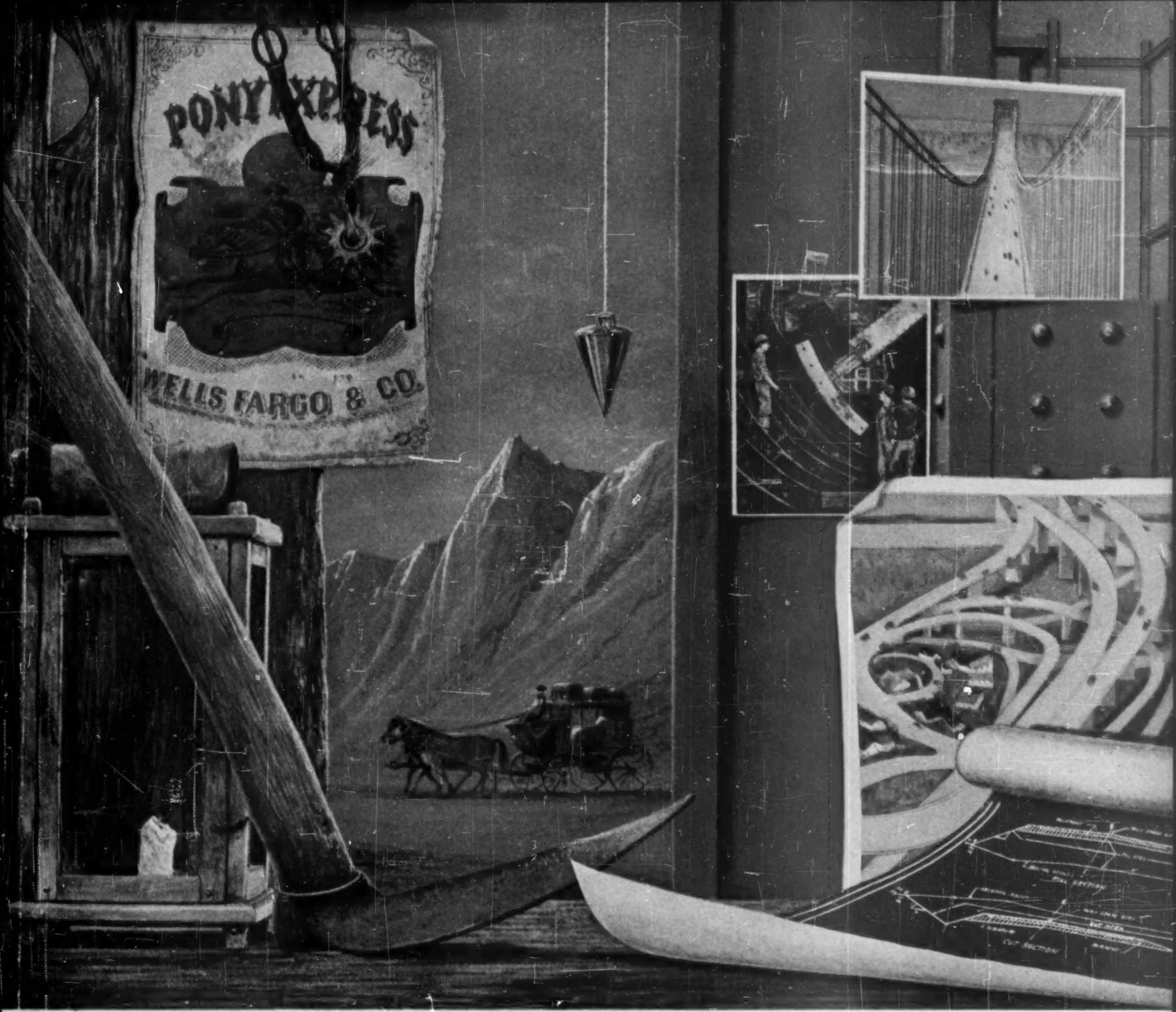
WOODSTOCK, ILL.
- Today's streets—tomorrow's base course ---- Feb., 95

WORCESTER, MASS.
- Help neighborhood analysis ---- Feb., 35
- Cleans its catch basins ---- Dec., 23

WYCKOFF, N. J.
- "The old swimming hole" ---- May, 184

YPSILANTI, MICH.
- No" alligators" on our streets ---- May, 161

YOLO COUNTY, CALIF.
- Better roadside weed control ---- Oct., 96



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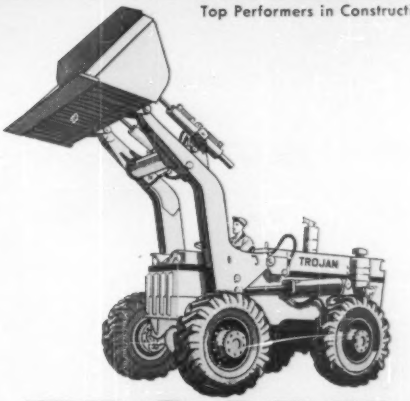

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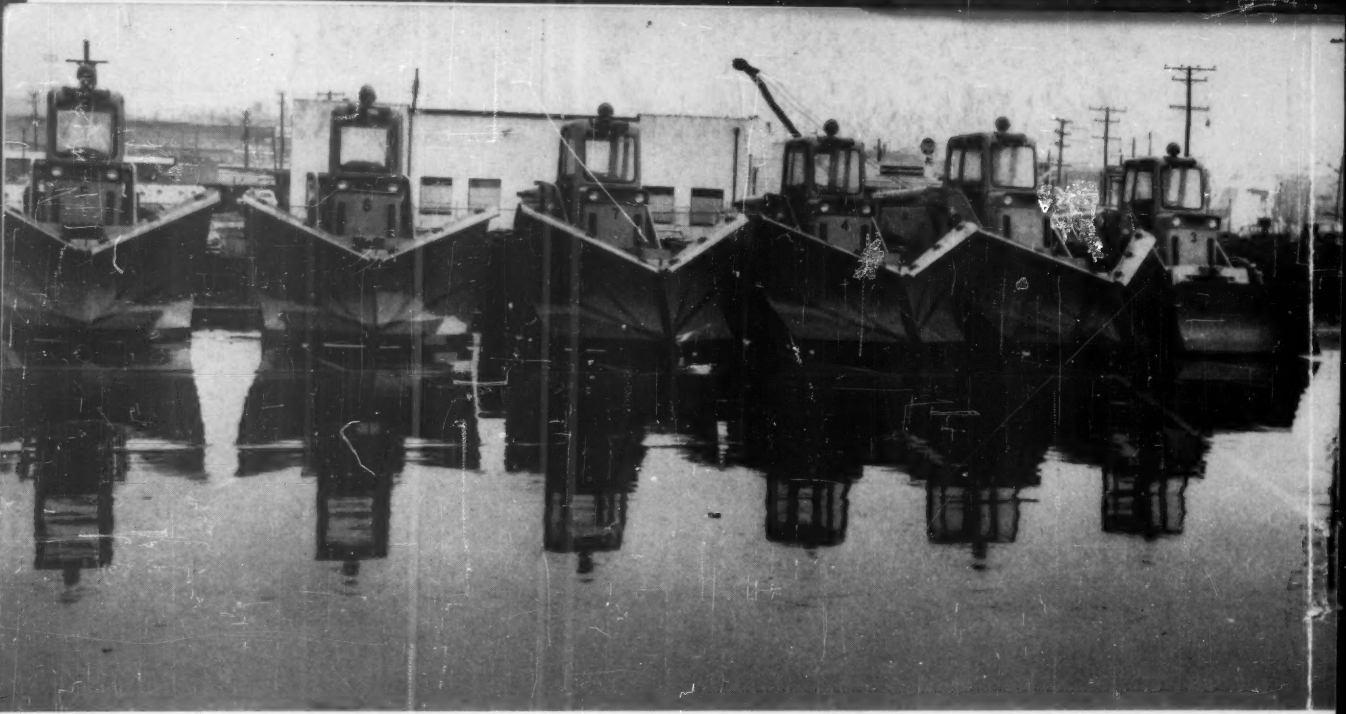

6 Michigans for Baltimore Highway Dept.

City set for crippling snow storms, meanwhile speeds road repair, landfill work

Like many communities south of the Snow Belt, the City of Baltimore, Maryland, needs heavy-duty snow removal equipment only occasionally. Specialized units just aren't economical. Yet, at times, only their efficiencies can unblock a snow-plugged city.

Obviously, this need can best be filled by machines which are good snow fighters as well as good dirtmovers. Baltimore's choice is Michigan Tractor Shovels—six of them!

Snowbound . . . never again!

This vital selection was triggered by a "once-in-a-lifetime" snowstorm of two years ago. It stopped traffic for three days . . . kept most of the city's 982,000 people from leaving their homes. When streets were finally cleared—and the discomfort, inconvenience, and fire danger over—the City Government vowed, "Never again!"

Soon, they had written a 375 page master snow removal plan. Some 90 new plows were bought to attach to their trucks and graders. For fast clearing of the main trouble spots—405 linear miles, 1665 plow miles of principal streets and intersections—in came the six powerful, high-speed Michigans.

The main advantages of these units has proved to be their *dependability, speed,* and *versatility.* Equipped with plows, each four-wheel-drive, power-steered, torque-converter machine can clear a path 8 to 9 ft wide. With buckets—which interchange simply by removing four pins—units speedily load windrowed snow. And, in summer, they speed all kinds of dirtmoving and maintenance jobs . . .

Assigned to street crews

Five of the machines—all 2 yd Model 125A's—are assigned throughout the dirtmoving season primarily to road repaving and grading crews. They shuttle at traffic speeds from job to job, clearing old pavement, digging and loading dirt, handling road material, etc.

One Michigan speeds cleanup at three scattered sites

The sixth Michigan, a 2¾ yd Model 175A, handles cleanup and coverage at *two* landfill garbage dumps *AND* cleanup around a city incinerator. This 27 mph rig shuttles between sites under its own power . . . dozes and covers an average of 100 truck-loads of street dirt, tin cans and incinerator ash per 8-hour day.

"This rig—and our other Michigans—are doing a fine job!" says George V. Walters, Baltimore's general superintendent of highways. "The machines were purchased and delivered Sept 24, 1958, and as of this date we have had no tire troubles. Distributor service (from Paving Supply & Equipment Co) is excellent! We think every city could do well to investigate the fast, high-speed, dependable Michigan line!"

On typical landfill assignment Michigan dozes refuse over bank. Later the 2¾ yd rig will dig bank-run gravelly sand and carry it in for cover. Compaction is achieved during normal dozing both before and after coverage.

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